

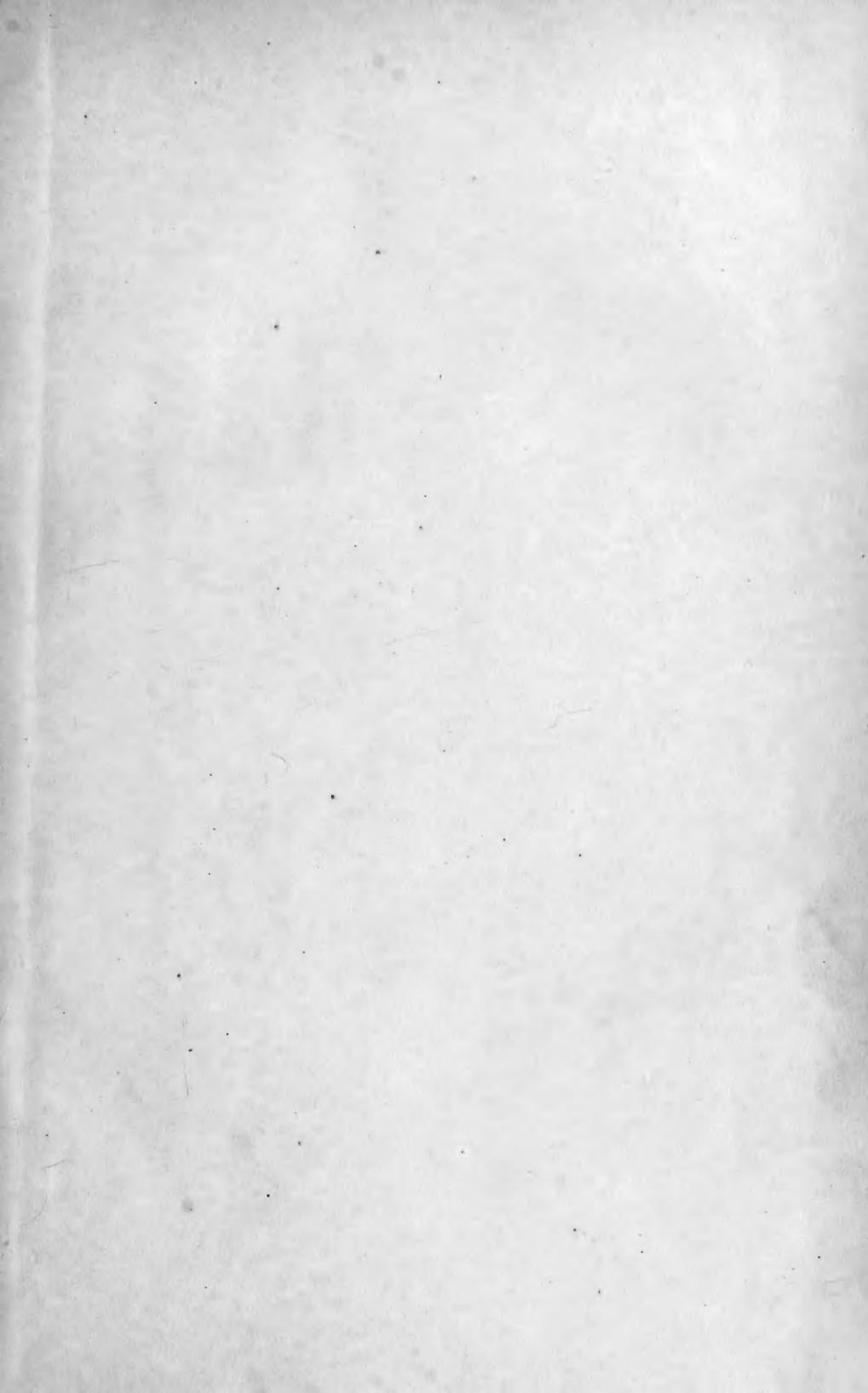
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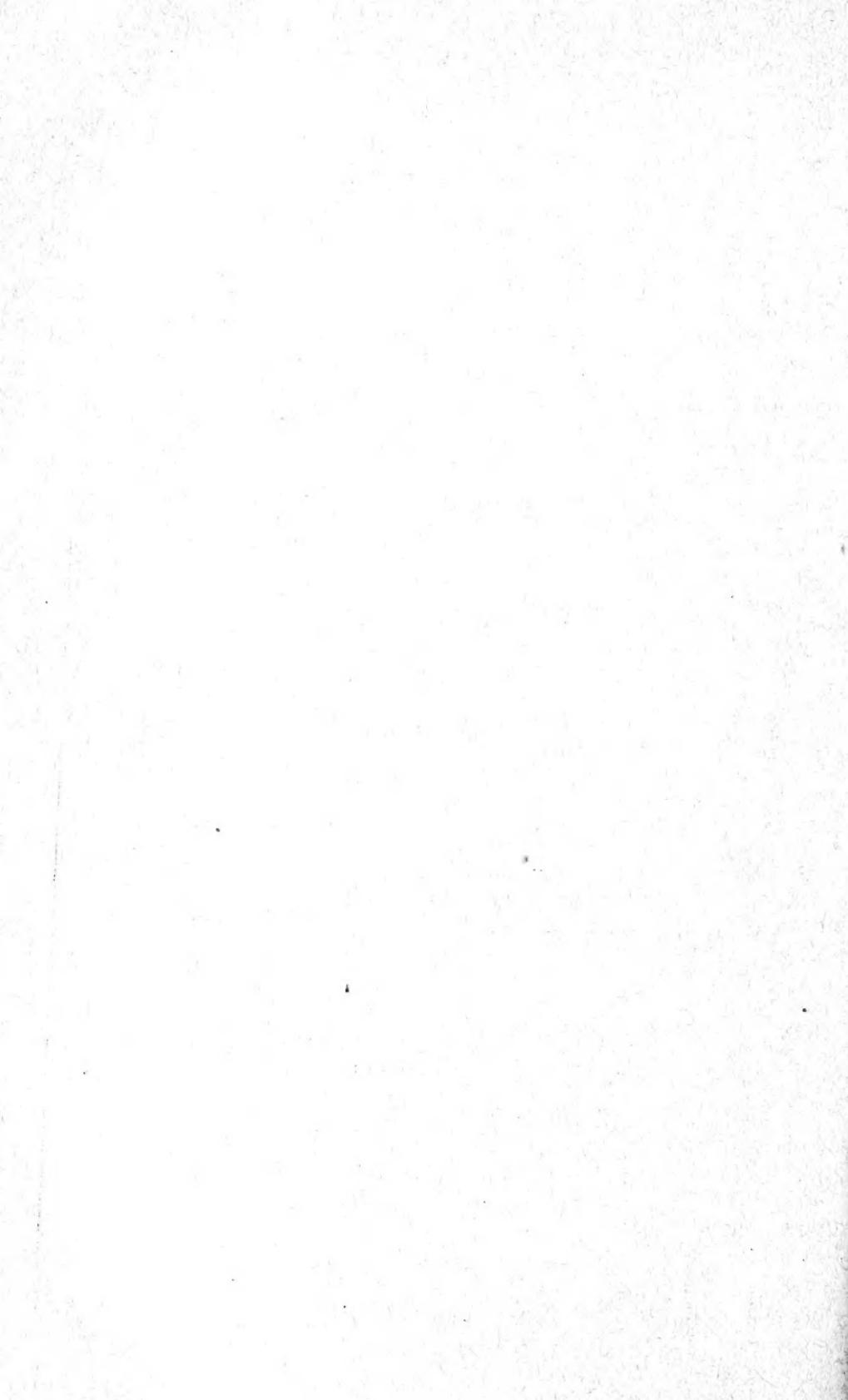




Rathbun, R.







LISTS

OF THE

DREDGING STATIONS

OF THE

UNITED STATES FISH COMMISSION

FROM

1871 TO 1879 INCLUSIVE,

WITH

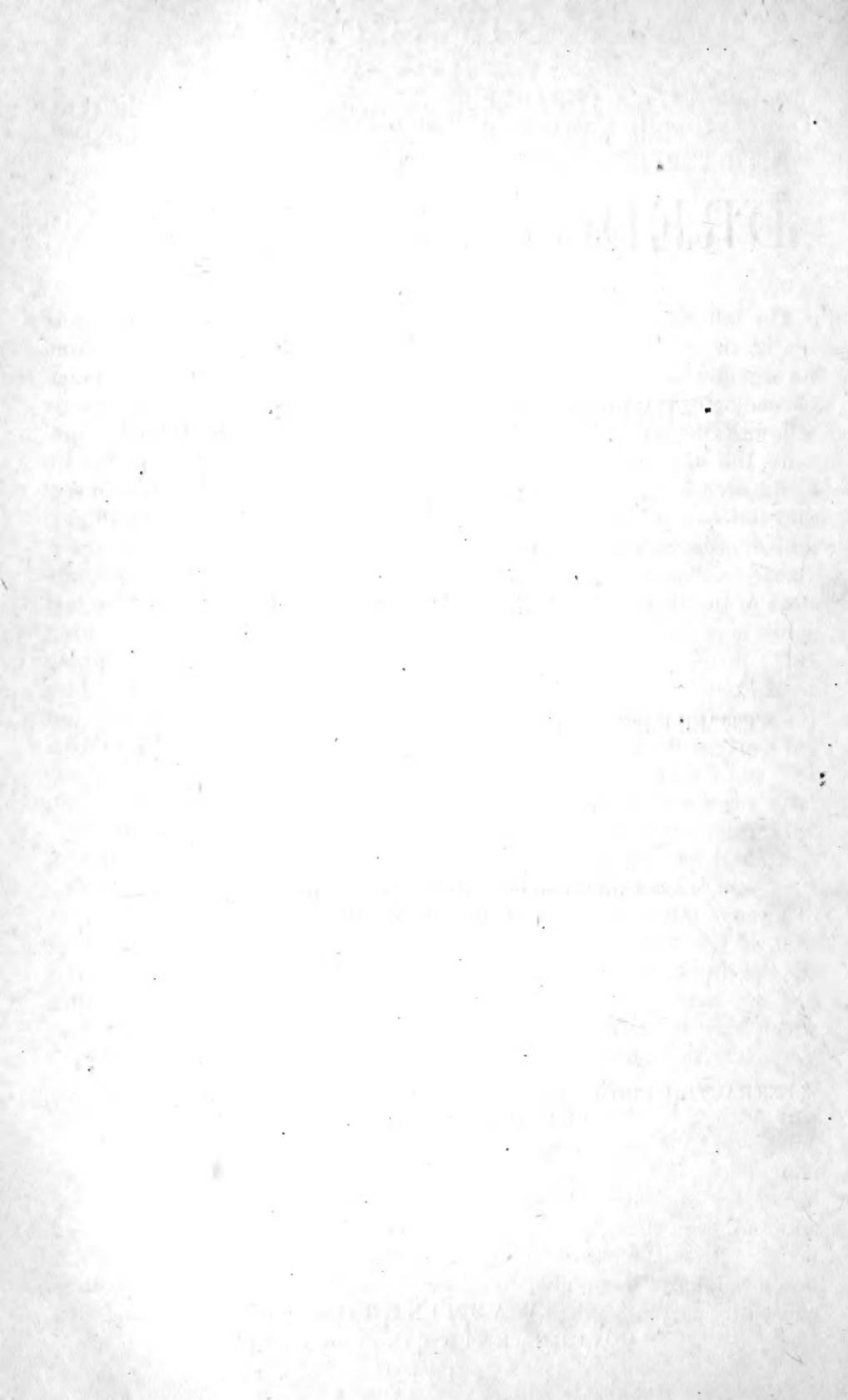
TEMPERATURE AND OTHER OBSERVATIONS.

[ARRANGED FOR PUBLICATION BY SANDERSON SMITH AND
RICHARD RATHBUN.]

[EXTRACTED FROM THE ANNUAL REPORT OF THE COMMISSIONER OF
FISH AND FISHERIES FOR 1879.]

WASHINGTON:
GOVERNMENT PRINTING OFFICE.

1882.



000.—LISTS OF THE DREDGING STATIONS OF THE UNITED STATES FISH COMMISSION FROM 1871 TO 1879, INCLUSIVE, WITH TEMPERATURE AND OTHER OBSERVATIONS.

[Arranged for publication by SANDERSON SMITH and RICHARD RATHBUN.]

The following lists include all the recorded dredging stations made by, or in connection with, the United States Fish Commission, from its organization up to date. The stations are, for the most part, arranged chronologically, and are designated by four series of numbers or letters, as follows: One series of numbers, from 1 to 87, with letters appended, represents the stations for 1871. The 1872 stations (in the Bay of Fundy) are designated by letters from *t* to *z*. Those for 1873 are indicated by a second series of numbers, from 1 to 212, with B. (Bache) or Bl. (Bluelight) added, according as the dredgings were carried on from the steamers Bache or Bluelight. In this series, however, are also included the stations of the Bache for 1872 and 1874, as well as those for 1873. The last series combines all the stations from 1874 to 1879, inclusive (omitting 1876, during which year sea-work was suspended), in numbers running from 1 to 769. For the sake of obtaining greater uniformity in recording the stations on charts, as explained further on, the stations for 1874 and 1875, originally numbered separately, have been united with those from 1877 to 1879, and given numbers following 1879. The numbers for these later years run as follows: 1874, from 400 to 580; 1875, from 600 to 769; 1877, from 1 to 128; 1878, from 129 to 238; 1879, from 239 to 378.

A chart has been prepared by Mr. Smith to illustrate the dredgings of the Commission north of Cape Cod, exclusive of those of 1872 in the Bay of Fundy; those of the Bache, on the Banks, in 1872; and of the Speedwell, off the coast of Nova Scotia, in 1877. On this chart the stations of the Speedwell for 1877, 1878, and 1879 are indicated by numbers only, and are readily distinguished from those of the Bache and Bluelight, which have B. or Bl. affixed to them. In such of the following tables as refer to this chart, the localities given are taken from the original record books, whenever such exist (*i. e.*, for all the work of the Speedwell and much of that of the Bluelight—101 Bl. to 166 Bl.), with some other notes added to facilitate the finding of the localities on the chart. In many cases the positions were marked, at the time, on the steamers' charts by the commanding officer, and all such positions have been adopted, even though differing somewhat from those given by the record books. From the nature of the operations of dredging and trawling, it becomes almost impossible to estimate exactly the changes of position caused by currents, &c., especially when out of sight of land, and in a

few cases the positions were not placed on the charts at the time, and the bearings given do not suffice to fix them very accurately. It is believed, however, that but few positions laid down on the chart are rendered uncertain to any great extent by either of these causes. A large part of the positions determined by the Bache were originally given by latitude and longitude. The other latitudes and longitudes given in the tables are taken from the accompanying chart, and are intended to serve as the readiest means of finding the localities, all of which are either thus designated or are referred to as being near others, which are so. Of the dredging stations *north of Cape Cod*, Nos. 79 B to 97 B, 37 to 123 are outside of the limits of the chart. These, and all others of the *northern stations*, not placed upon the chart, are marked with + before the serial number. The bearings given for the Speedwell's work in 1879 are true; the others, with a few (unrecognizable) exceptions, are magnetic.

In the last column of the tables the letter indicates the apparatus employed in dredging: D., Dredge; Ag. D., Agassiz Dredge; R. D., Rake Dredge; T., Trawl; Ag. T., Agassiz Trawl; O. T., Otter Trawl; Tan., Tangles.

STATIONS FOR 1871, IN AND ABOUT VINEYARD SOUND, MASSACHUSETTS.

During this, the first year of the Commission, the dredgings in shallow water were made partly from a sail-boat, and partly from a steam-launch, and those in the deeper waters, from the United States revenue-cutter Moccasin, Capt. J. G. Baker. The dredging stations numbered in all about 250, but to avoid confusion in laying them out on the chart, they were combined into 87 groups or lines, each including from 2 to 9 stations, the lines being designated by numbers, the stations by letters. In this manner they were represented on the large chart accompanying the Report of the United States Fish Commissioner for 1871-'72. In making up the present list the same arrangement has also been followed, and where all the stations of a group were of the same nature, they have been located collectively; otherwise the exact position of each station has been given.

Dates are not prefixed to all of the inner groups, as many of these include stations made on different days. Temperature observations (with Miller-Casella self-registering thermometers) were taken at most of the outer stations, as recorded in the list, but were omitted at the inner ones. The dredge was the implement most commonly used for scraping the bottom, but the beam-trawl was also frequently employed on the smooth inner grounds. The rake-dredge was worked a few times off Gay Head, and the tangles very rarely, in only a few places. The characters of the many localities gone over in 1871, as well as the species of animals found inhabiting them, are fully discussed in the "Report upon the Invertebrate Animals of Vineyard Sound and the adjacent waters, with an account of the physical characters of the region," by Prof. A. E. Verrill; contained in the Report of the United States Fish Commissioner, Part I, for 1871-'72.

DREDGING STATIONS OF U. S. FISH COMMISSION.

3

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperature.		
					Air.	Surface.	Bottom.
1	1871.						
2	June 30	a, b. Off Little Harbor, Wood's Holl... a, b. Off Little Harbor, Wood's Holl, between Nobska Point and Nonamesset Island.	1 $\frac{1}{2}$ -2 2-3 $\frac{1}{2}$	Covered with eel-grass Rocky, small stones.			
3	July 11	a, b, c. Off Great Harbor, Wood's Holl, from south of buoy R. No. 4 to Great Ledge.	2 $\frac{1}{2}$ -9 $\frac{1}{2}$	Rocks, gravel, &c.			
4	June 30	a, b, c, d, e. Beginning nearly the same as No. 3 and extending to beyond buoy R. No. 2. Wood's Holl:	3 $\frac{1}{2}$ -12 $\frac{1}{2}$	Rocks, small stones, &c.			
5		a, b. Southeast of Nonamesset Island. c, d. Between Nonamesset Island and Great Ledge. e. Off Mink Point, Nonamesset Island. f, g. Mouth of Great Harbor.	3 $\frac{1}{2}$ -5 $\frac{1}{2}$ 3 $\frac{1}{2}$ 8 $\frac{1}{2}$ 5 $\frac{1}{2}$ -9 $\frac{1}{2}$	Sand, gravel Rocks, stones, dead shells. do do			
6	July 20	Vineyard Sound: a, b. Between Nobska Point and Falmouth. c. Between Nobska Point and Falmouth. d. About $\frac{1}{2}$ mile south of Falmouth. e, f. Between Falmouth Harbor and Western end of L'Homme Dieu Shoal.	2-3 3-5 4 $\frac{1}{2}$ 5 $\frac{1}{2}$ -9	Covered with eel-grass Gravel and shells do do			
7		a. Lackey's Bay, Vineyard Sound. b, c, d. Lackey's Bay, Vineyard Sound.		Covered with eel-grass			
8	June 30	a, b, c, d, e, f, g. Vineyard Sound, off Nonamesset Island and Wood's Holl.	7-10	Gravel Rocks, gravel, small stones.			
9	June 29	a, b, c, d. Vineyard Sound, south of Little Harbor, Wood's Holl, $\frac{1}{2}$ to 1 $\frac{1}{2}$ miles from Nobska Point.	7-12	Rocks.			
10	July 24	Wood's Holl: a, b, c. Passages between Nonamesset and Naushon Islands. d. Hadley Harbor. e, f. Between Long Neck and Nonamesset Island.	1 $\frac{1}{2}$ -2 $\frac{1}{2}$ 3 $\frac{1}{2}$ 3-6 $\frac{1}{2}$	Soft mud do Hard gravel			
11		Wood's Holl Passage: a, b, c. Off Nonamesset Island.	3 $\frac{1}{2}$ -4 $\frac{1}{2}$	Fine gravel, dead weeds.			
12		d, e, f, g. Off Uncatena Island.	3 $\frac{1}{2}$ -5	Sand, stones			
13		a, b, c. Wood's Holl Passage, between Long Neck and Nonamesset Island.	2 $\frac{1}{2}$ -5 $\frac{1}{2}$	Sand, gravel			
14		a, b. Mouth of Great Harbor, Wood's Holl, from off Bar Neck wharf to midway between Mink Point and Parker's Neck.	1 $\frac{1}{2}$ -7	Gravel, &c.			
15		Wood's Holl, in the passage-way to the east and south of Ram and Bluff Islands:					
16		a, b	3 $\frac{1}{2}$ -5 $\frac{1}{2}$	Rocky			
17		c, d	2 $\frac{1}{2}$ -5 $\frac{1}{2}$	do			
18	July 24	e, f, g. In Great Harbor.	5-10	Rocky, sand			
19		a, b, c. Wood's Holl, buoy No. 3, Middle Ledge to Lone Rock Spindle.	3-2 $\frac{1}{2}$	Gravel, small stones, shells			
20		a, b, c. Great Harbor, Wood's Holl, near buoys No. 12 and 14.	1 $\frac{1}{2}$ -14	Rocks			
21	June 27	Mouth of Great Harbor, from Bar Neck to east of Nonamesset Island.	1 $\frac{1}{2}$ -14 $\frac{1}{2}$				
22	June 28	a, b					
		c, d, e, f	3 $\frac{1}{2}$ -5 $\frac{1}{2}$	Mud and eel-grass			
		a, b, c, d. Mouth of Great Harbor, from off Bar Neck wharf to midway between Parker's Neck and Nonamesset Island.	2 $\frac{1}{2}$ -12 $\frac{1}{2}$	Rocky, &c.			
		e		Hard gravel.			
		a, b, c. Mouth of Great Harbor, between Parker's Neck and Lone Rock Spindle.					
		d, e, f	1 $\frac{1}{2}$ -8 $\frac{1}{2}$				
		a, b, c. Mouth of Great Harbor, between Nonamesset Island and Parker's Neck.	1 $\frac{1}{2}$ -6 $\frac{1}{2}$	Gravel, &c.			
		g					
		a, b, c, d, e. Vineyard Sound, southeastly from Nobska Point about $\frac{1}{2}$ mile; all near together.	6-10	Rocks, gravel, small stones.			
		Vineyard Sound, between Nobska Point and Falmouth Harbor.	4-5 $\frac{1}{2}$				
		a, b, c					
		d		Stones, dead shells.			
				Sand, gravel			

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperature.		
					Air.	Surface.	Bottom.
23	1871. June 30 July 3 July 8	a, b, c, d, e, f. Between Nobska Point and Falmouth, and south of Falmouth, about 1 mile. Vineyard Sound: a, b. About $\frac{1}{2}$ miles south of Falmouth. c, d. North of west end of L'Homme Dieu Shoal.	4 $\frac{1}{2}$ -10 5 $\frac{1}{2}$ -10 5-13	Gravel, small stones, shells.	.....	.....	.....
24		a, b, c, d, e. Vineyard Sound, between Waquoit Bay and Falmouth.	3-5	Sand, shells, eel-grass.	.....	.....	.....
25		a, b, c, d, e. Vineyard Sound; a line of dredgings parallel to No. 25, and from $\frac{3}{4}$ mile further south.	5-13	Gravel, shells	.....	.....	.....
26		a, b, c, d, e. Vineyard Sound, about midway between the western part of L'Homme Dieu Shoal and the mainland.	5 $\frac{1}{2}$ -13	Sand; shells, eel-grass.	.....	.....	.....
27		Vineyard Sound:	5 $\frac{1}{2}$ -13	.....	.....	.....	.....
28	July 20	a, b. Off western entrance to channel between L'Homme Dieu Shoal and Hedge Fence. c, d, e, f. South of western end of Hedge Fence.	5-6	Sand, stones, sea-weeds	.....	.....	.....
29		a, b, c. Vineyard Sound; a line parallel to, and just south of, eastern half of Hedge Fence.	10-12	Sand, gravel, small stones.	.....	.....	.....
30		a, b. Mouth of Vineyard Haven, between East and West Chop.	5-7	Sand, eel-grass, algae.	.....	.....	.....
31	July 20	Vineyard Sound: a, b. Between Hedge Fence and East Chop. c, d, e. North of East Chop and off Vineyard Haven.	10-13	Sand, gravel, small stones.	.....	.....	.....
32		a, b, c. Vineyard Sound; line running east and west, north of eastern half of Hedge Fence.	9-11 $\frac{1}{2}$	.....do.....	.....	.....	.....
33		Vineyard Sound: a, b. South of eastern end of L'Homme Dieu Shoal.	11-12 $\frac{1}{2}$	Gravel, &c.	.....	.....	.....
34		c, d. Southeast of same shoal	5 $\frac{1}{2}$ -13 $\frac{1}{2}$	.....do.....	.....	.....	.....
35		a, b, c, d, e, f. Vineyard Sound, between eastern end of L'Homme Dieu Shoal and Wreck Shoal.	5-7	Gravel, hard mud, sand.	.....	.....	.....
36		a, b, c, d, e. Vineyard Sound; line running east and west between Wreck Shoal and 1 mile off Waquoit Bay.	4-7 $\frac{1}{2}$	Gravel, shells.	.....	.....	.....
37		a, b, c, d. Nantucket Sound, between Wreck Shoal and Horse-Shoe Shoal.	4 $\frac{1}{2}$ -15 $\frac{1}{2}$	Astrangia, sponges, &c.	.....	.....	.....
		Vineyard Sound, off north side of Martha's Vineyard and nearly parallel with the shore, distant from shore $\frac{1}{2}$ mile:					
		a, b, c, d. Between Martha's Vineyard and Middle Ground.	5-11	Gravel, stones, rocks.	.....	.....	.....
		e, f, g. Off West Chop.	9-13	Rocks, sand.	.....	.....	.....
		h, i. Off East Chop.	4 $\frac{1}{2}$ -9	Sand, stones	.....	.....	.....
38		Vineyard Sound: a. About $\frac{1}{2}$ mile north of center of Middle Ground.	10-14	Gravel.	.....	.....	.....
39	June 29	b, c. Just off center of Middle Ground.	9 $\frac{1}{2}$ -13 $\frac{1}{2}$	.....do.....	.....	.....	.....
40		a, b. Vineyard Sound, about midway between Nobska Point and Middle Ground.	12-13 $\frac{1}{2}$	Stones, gravel.	.....	.....	.....
41		a, b, c, d. Vineyard Sound, between Wood's Hole and Middle Ground.	10-13	Gravel, stones, sand.	.....	.....	.....
		Vineyard Sound:					
		a. About $\frac{1}{2}$ miles east of Nobska Point.	4 $\frac{1}{2}$ -6 $\frac{1}{2}$	Small stones.	.....	.....	.....
		b. About $\frac{1}{2}$ miles southeast of Nobska Point.	10-12	.....do.....	.....	.....	.....
42	July 17	a, b. Vineyard Sound, off Tarpaulin Cove.	10 $\frac{1}{2}$ -15 $\frac{1}{2}$	Gravel.	.....	.....	.....
43		Vineyard Sound: a, b, c. Line of dredgings off northern half of Naushon Island, parallel to shore, distant about $\frac{1}{2}$ mile.	10 $\frac{1}{2}$ -13 $\frac{1}{2}$	Gravel, hard sand.	.....	.....	.....
		d. Continuation of same, $\frac{2}{3}$ mile off Nonamesset Island.	10 $\frac{1}{2}$ -11 $\frac{1}{2}$	Gravel.	.....	.....	.....

DREDGING STATIONS OF U. S. FISHING COMMISSION.

5

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperature.		
					Air.	Surface.	Bottom.
44	1871.	a, b, c, d, e. Vineyard Sound; line about parallel to last, off northern half of Naushon Island, about 1 mile from shore.	10½-15½	Gravel.			
45		a, b. Vineyard Sound, off Quick's Hole.	6½-8½	Coarse gravel, shells.			
46		Vineyard Sound, off the Elizabeth Islands.	7-14½				
a.	Off Pasque Island	Sand, shells.					
c.	Off Robinson's Hole	do					
d.	Off south end of Naushon Island	Sand, shells, and gravel					
47		a, b, c, d, e. Vineyard Sound, off west side of Martha's Vineyard, between Menemsha Bight and Cedar Tree Neck, $\frac{1}{2}$ to $1\frac{1}{2}$ miles from shore, and nearly parallel to it.	10-17½				
a, b, c, d				Black mud, dead mussels, &c.			
e				Sand.			
48		a, b, c, d. Vineyard Sound, same as last, $\frac{1}{2}$ mile from shore, and extending about $1\frac{1}{2}$ miles both north and south of Cape Higgon.	4½-11	Sand, gravel, shells.			
49		Vineyard Sound:					
a.	About northeast of Gay Head, 4½ miles.	7½-13					
b.	About west of Lucas Shoal, 1½ miles.	5-6					
50		a, b. Vineyard Sound, Menemsha Bight.	4-8				
51		Vineyard Sound, Menemsha Bight:					
a, b, c		1½-2½	Mud, fine sand.				
d		4½	do				
e		6-9	do				
52	July 14	a, b, c, d. Vineyard Sound, north of southwestern extremity of Martha's Vineyard, $\frac{1}{2}$ -1 mile from shore (c, d, off Menemsha Bight).	10-12	Sand.			
53	July 14	a, b, c, d, e. Vineyard Sound, north and northeast of Devil's Bridge, Gay Head, $\frac{1}{2}$ to 1 mile from shore.	5-12	Sand, rocks.			
54		Vineyard Sound, north of Gay Head:					
a.	About $\frac{1}{2}$ miles from shore.	16½	Mussels.				
b.	About $2\frac{1}{2}$ miles from shore.	14-15½	do				
55	July 22	a, b, c. Vineyard Sound, north of Devil's Bridge, Gay Head, $\frac{1}{2}$ mile.	6½-13½	Rocky, dead mussels, &c.			
56	July 22	a, b, c, d. Vineyard Sound, northwest-erly from Gay Head, about 1 mile.	5-11	do			
57		a, b, c, d, e. About same position as last, forming a line about $\frac{1}{2}$ mile further off.	5-13½	Rocky.			
58		a, b, c, d, e. Vineyard Sound, northwest-erly from Gay Head, $1\frac{1}{2}$ -2 miles.	10-16				
a, b, c				Rocky.			
d				Mud, dead mussels.			
59		a, b, c. Vineyard Sound, northwesterly from Gay Head, $\frac{1}{2}$ -1½ miles.	5½-11½	Rocky.			
60		a, b, c. Vineyard Sound, northwesterly from Gay Head, 1-2 miles.	6-11½	do			
61		a, b, c. Vineyard Sound, northwesterly from Gay Head, 1-2 miles; more east-erly than 60.	5½-13½	do			
62		a, b, c. Vineyard Sound, northwesterly from Gay Head, 1-2 miles; more east-erly than 61.	5½-16½	do			
63		a, b, c, d. Vineyard Sound, north of Devil's Bridge, Gay Head, $\frac{1}{2}$ -1½ miles.	6-8½	Rocks, sand, shells.			
64	July 12	Buzzard's Bay, Cataumet Harbor:					
a.	In harbor	3½	Sand, eel-grass.				
b.	At mouth of harbor	3½-4½	do				
65		a, b. Buzzard's Bay, off Cataumet Harbor.	4½				
66		a, b. Buzzard's Bay, between Long Neck and Quamquisset Harbor.	5-6½	Hard sand.			
67	July 24	a, b. Just outside of 66.	5-6½	Sand, mud.			
68		Buzzard's Bay, west of Quamquisset Harbor:					
a.	About 2 miles	7½	Fine sandy mud.				
b.	About 1 mile	7½	do				
c.	About $\frac{3}{4}$ mile	6-7	Mud.				
a, b.	Buzzard's Bay, west of Quamquisset Harbor, about $1\frac{1}{2}$ miles.	5½-7½					
69							

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperature.		
					Air.	Surface.	Bottom.
70	1871.	a, b, c, d. Buzzard's Bay, westward of Quamquisset Harbor, about $1\frac{1}{2}$ - $2\frac{1}{2}$ miles.	7 $\frac{1}{4}$	Sand, gravel, stones			
71		a, b. Wood's Holl Passage, between Long Neck and Uncatena Island.	3 $\frac{3}{4}$ -6 $\frac{1}{4}$	Fine gravel			
72		c, d. West of Long Neck, $\frac{1}{2}$ - $\frac{3}{8}$ mile.	3 $\frac{3}{4}$ -6 $\frac{1}{4}$	Rocks, hard sand			
73		a, b, c, d. Buzzard's Bay, northward from Woepecket Island, $1\frac{1}{4}$ -2 miles, forming a line running about northeast and southwest.	7 $\frac{1}{2}$ -8 $\frac{1}{2}$	.....		
74		Buzzard's Bay, north of northern part of Naushon Island:	6 $\frac{1}{2}$ -10 $\frac{1}{4}$	Sand, mud			
		a, b, c. Parallel and near to shore from Uncatena Island to south of Woepecket Island.	6 $\frac{1}{2}$	Rocks			
		d. About west of Woepecket Island, $\frac{1}{2}$ mile.	7 $\frac{1}{2}$ -8 $\frac{1}{2}$	Sand and muddy sand			
		e, f, g. Northwesterly from Woepecket; e, $\frac{1}{2}$ mile; f, 1 mile; g, $1\frac{1}{2}$ miles.	7 $\frac{1}{2}$ -8 $\frac{1}{2}$	Mud			
75		a, b. Buzzard's Bay, northward of Woepecket Island, $1\frac{1}{4}$ - $2\frac{1}{2}$ miles.	7 $\frac{1}{2}$	.....		
		Buzzard's Bay, forming a line of dredgings parallel to the Elizabeth Islands and distant from them $\frac{1}{2}$ - $\frac{3}{4}$ mile.	7-9	.....		
		*a, b, c. Off Naushon Island.		Blue mud			
		d, e. Off Pasque Island		do			
76		f, g, h. Off Cutythunk Harbor.	3 $\frac{1}{4}$ -5	.....		
		a, b, c. Buzzard's Bay, between Quick's Hole and Lone Rock.	3 $\frac{1}{4}$ -8 $\frac{1}{2}$	Gravel, dead weeds, &c			
77		a, b, c, d, e, f. Quick's Hole, between Pasque Island and Nashawena Island.	5 $\frac{1}{4}$ -8 $\frac{1}{2}$	Rocks, gravel, sand			
78		a, b, c, d, e. Buzzard's Bay, off northern entrance to Robinson's Hole.	3 $\frac{1}{4}$ -7 $\frac{1}{2}$	.....		
		a		Mud, eel-grass, and dead weeds			
		b		Black mud			
		c		Blue clay			
79		In channel between Chappaquiddick Island, Martha's Vineyard, and Hawe's Shoal:		.....		
		a. Northern part of channel	3 $\frac{1}{4}$ -4 $\frac{1}{2}$	.....		
		b. Southern part of channel	4 $\frac{1}{2}$ -5	.....		
80	Sept. 12	Southeasterly from Martha's Vineyard, $3\frac{1}{2}$ to 9 miles:		.....		
		a. 10 miles south from Cape Poge	16 $\frac{1}{2}$	Sand and silicious sponges	64	60	
		b. 13 miles south from Cape Poge	18 $\frac{1}{2}$	Sand	64	59	
		c. $1\frac{1}{2}$ miles west of b	21	Sandy mud	61.5	59	
81	Sept. 12	South of Martha's Vineyard, 5 to 8 miles:		.....		
		a. Southeast of Gay Head, $12\frac{1}{2}$ miles	16 $\frac{1}{2}$	Sand			
		b. Southeast of Gay Head, 8 miles	16 $\frac{1}{2}$	do			61
82	Sept. 9	South and southwest from Gay Head, about 5 miles; northwest of Nomans Land:		.....		
		a. 5 miles south-southwest of Gay Head	8-12	Gravel and stones			
		b. 5 miles south of Gay Head	16	do			62
		a, b, c, d. Vineyard Sound, off Gay Head, parallel to No. 58, and slightly more distant from shore.	10-16	Rocky			
84	Sept. 11	South and southwest of Gay Head:		.....		
		a. $1\frac{1}{2}$ miles southwest of Gay Head	13	Rocky, gravel			
		b. 4 miles southwest of Gay Head	16 $\frac{1}{2}$	Sandy mud			
		c. $2\frac{1}{2}$ miles a little west of south of Gay Head	12	Rocky, gravel			
		d. $3\frac{1}{2}$ miles a little east of south of Gay Head	7	do			
85	Sept. 9	West of Gay Head, 2 to 5 miles:		.....		
		a. 3 miles; b, $3\frac{1}{2}$ miles; west of Gay Head	15 $\frac{1}{2}$	Sand	67	63	
		c. 4 miles west of Gay Head	18	Soft, sticky mud	62	58	
		d. 1 mile north-northwest from c	19	do	62	57	
		e. 5 miles a little north of west from Gay Head	11	do	63	59	
86	Sept. 13	West-southwest of Gay Head, 10 to 13 miles:		.....		
		a. 13 miles west-southwest from Gay Head	25	Gravel, sand, with some mud			
		b. $10\frac{1}{2}$ miles west-southwest from Gay Head	25	do			64

Serial number.	Date.	Locality.	Depth in fathoms.	Temperature.		
				Air.	Surface.	Bottom.
87	1871. Sept. 14	a. 19½ miles west-southwest of Gay Head. b. 18½ miles west-southwest of Gay Head.	29 29	Sandy mud..... .....do	62	59

STATIONS FOR 1872, WITH HEADQUARTERS AT EASTPORT, ME.

The dredgings for 1872 were mostly carried on from a large sail-boat; but those in the deeper waters of the Bay of Fundy were made from the United States revenue-cutter Mosswood, Captain Hodgdon. The regions explored were about as follows: Eastport Harbor, South Bay, and Passamaquoddy Bay, all of which are comparatively shallow-water areas; the shallow waters about the island of Grand Menan, especially those among the small islands to the east of Grand Menan; and the deeper waters east of Campobello Island, west of Grand Menan; and toward the center of the Bay of Fundy, between Grand Menan and Nova Scotia.

In connection with the shallow-water dredgings no complete record of observations was kept, but the collections made were appropriately labeled with the precise locality, depth of water, nature of bottom, &c. The more important hauls in deep water, mostly accompanied by temperature observations, are as follows, the letters used to designate them being the same as were employed in the original records:

Serial letter.	Date.	Locality.	Depth in fathoms.	Temperatures.		
				Air.	Surface.	Bottom.
+t.	1872. Aug. 24	Bay of Fundy, off Grand Menan, beginning at a point 8 miles SE. by E. of north end of White Head Island, and running NE. for a distance of nearly 3 miles. (Temperatures taken at the beginning and close, and the same at both.)	106-90	°	°	°
+t'.	...do...	Bay of Fundy, off Grand Menan, north of last; beginning 8½ miles E. of White Head Island, and extending about 2 miles SW.	96-100	.....	.....	37½
+u.	Aug. 23	Bay of Fundy, E. of Grand Menan, about 2½ miles E. of north end of White Head Island.	28-52	.....	53	39½
u'.	...do...	Bay of Fundy, E. of Grand Menan, 1½ miles E. by S. ¾ S. of north end of White Head Island.	29	.....	.....	44
+v.	Aug. 28	Grand Menan channel, west of Grand Menan Island; 2½ miles N. by W. ½ W. of Southern Head, G. M.	40	.....	48	45½
+v'.	...do...	Grand Menan channel, west of Grand Menan Island; 4½ miles NNW. ½ W. of Southern Head, G. M.	54	.....	47	40
+v''.	...do...	Grand Menan channel, west of Grand Menan Island; 6 miles N. ½ W. of Southern Head, G. M.	55	.....	.....	40
+w.	Aug. 16	Bay of Fundy, about 3½ miles east of Herring Cove Head, Campobello Island. (Soft muddy bottom.)	60	.....	.....	43
+w'.	...do...	Bay of Fundy, just off Herring Cove, Campobello Island.	27	.....	.....	46
+x.	Aug. 2	Bay of Fundy, 2½ miles, about SE. of Head Harbor Light, Campobello Island.	90	.....	48½	39½
+x'.	...do...	About 2½ miles ENE. of Head Harbor Light, Campobello Island.	77	.....	.....	42
+x''.	...do...	About 1½ miles NE. of Head Harbor Light.	30	.....	.....	46
+x'''.	...do...	Midway between Head Harbor Light and Spruce Island.	73	.....	48	45
+y.	Aug. 5	Passamaquoddy Bay, off North Harbor, Deer Island.	25	.....	57½	47
+z.	...do...	Passamaquoddy Bay, 1½ miles north of last.	32	.....	58	46

STATIONS FOR 1873, WITH HEADQUARTERS AT PEAK'S ISLAND, CASCO BAY, MAINE; AND ALSO STATIONS OF THE UNITED STATES COAST SURVEY STEAMER BACHE FOR 1872, 1873, AND 1874, IN THE GULF OF MAINE, &c.

In this list the dredgings indicated by the above heading have been grouped together, as they appear on the chart prepared for publication. Numbers ranging from 1 B. to 78 B. were originally assigned to the Bache dredgings for 1873 and 1874, in papers published by Professor Verrill in the American Journal of Science for April, 1874, and June, 1875, and elsewhere. To these the dredging stations of the Bache for 1872, 18 in number, have been added, thus increasing the list to 97 B. As to the regular series of dredgings made by the Bluelight, under command of Lieut. Commander L. A. Beardslee, in and off Casco Bay, no serial numbers were given to the hauls until the commencement of the temperature observations, July 21. To the numbers (1 to 66), given to such of the subsequent hauls as were accompanied by temperature observations, 100 has been added (101 Bl. to 166 Bl.), and numbers from 167 Bl. to 190 Bl. have been given to the hauls from July 12 to July 21, and from 191 Bl. to 212 Bl. to those taken after July 20, but not included in the temperature series. The descriptions of localities from 101 Bl. to 166 Bl. are taken from the record books for temperatures, with some additions, and from 167 Bl. to 212 Bl. from the eight books of dredging lists, which were kept. Additions to 101 Bl. to 166 Bl., taken from the dredging books, are marked D. L.

The dredging stations of the Bache for 1872 were on and about Saint George's Bank and La Have Bank, and extended as far as Halifax, N. S.; in 1873 they were mostly in the Gulf of Maine, especially in the region of Jeffrey's and Cashe's Ledges, a few being made in Massachusetts Bay; those for 1874 were entirely in the Gulf of Maine.

DREDGINGS BY THE BACHE, 1873.

DREDGING STATIONS OF U. S. FISH COMMISSION.

Serial number.	Date.	Latitude.	Longitude.	Depth in fathoms.	Nature of bottom.	Temperature.	
						Air.	Bottom.
1B..	Sept. 3	o 1	o /	Off Monhegan Island.....	52	Soft gray mud.....	o o
2B..	do	43 39	69 22	7 miles SW. from Monhegan Island.....	58	55 42	44
3B..	do	43 38	69 17	8 miles S. from Monhegan Island.....	58	55 42	42
4B..	do	43 37	69 05	13 miles SE. by S. from Monhegan Island.....	64	54 43	44
5B..	do	43 37	68 59	17 miles SE. from Monhegan Island.....	60	55 43	43
6B..	do	43 38	69 01	15 miles SE. from Monhegan Island.....	72	Brown mud, sand.....	60 54
7B..	do	43 38	69 01	do.....	82	do.....	44
8B..	do	43 36	68 32	18 miles SE. by S. from Matinicus Rock.....	94	Mud and gravel.....	56 55
9B..	do	43 36	68 24	23 miles SE. from Matinicus Rock.....	107	Sticky brown mud.....	56 57
10B..	Sept. 4	43 34	68 27	22 miles SE. by S. from Matinicus Rock.....	104	Soft brown mud.....	56 57
12B..	Sept. 13	43 20	68 33	Jeffrey's Bank.....	60	Brown mud.....	56 54
13B..	do	43 23	68 30	do.....	105 1/2	do.....	42
14B..	do	43 25 1/2	68 40	do.....	80	do.....	62 60
15B..	do	43 23	68 44	do.....	72 1/2	do.....	60 58
16B..	do	43 19	68 49	do.....	79	do.....	62 58
17B..	do	43 15 1/2	68 54	SW. from Jeffrey's Bank.....	100	Brown mud, gravel.....	59 57
18B..	do	43 15 1/2	69 06	do.....	106	Brown mud.....	58 56
20B..	Sept. 16	43 01	70 10	15 miles SE. from Boon Island Light.....	95	Mud.....	58 58
21B..	do	42 49	68 50	Casho's Ledge.....	52-90	Rocky.....	43
22B..	do	42 52	69 23	56 miles E. of Cape Ann.....	90	Blue mud.....	52 56
23B..	do	42 52	69 35	47 miles E. of Cape Ann.....	118	Mid.....	43
24B..	do	42 56	70 09	E. of Jeffrey's Ledge.....	114	Soft mud.....	54 57
24B..	do	42 56	70 17 1/2	6 miles farther W.....	114	do.....	59 57
26B..	do	42 28	70 44	31 miles SE. from Halfway Rock.....	29	do.....	58 58
27B..	do	42 32 1/2	70 50	Salem Harbor.....	50	do.....	40
27B..	do	42 40	70 27 1/2	Jeffrey's Ledge, 6 miles E. of Thatcher's Island Lights.....	24	Gravel and stones.....	54 42
28B..	do	42 41 1/2	70 24 1/2	8 miles E. by N. of Thatcher's Island Lights.....	26	do.....	46
29B..	do	42 47 1/2	70 20 1/2	14 miles NE. by E. & E. from Thatcher's Island Lights.....	33	do.....	49
30B..	do	42 26	70 35	Massachusetts Bay.....	50	Soft mud.....	60 58

Apparatus used.

DREDGINGS BY THE BACHE, 1873—Continued.

Serial number.	Date.	Locality.	Depth in fath.		Nature of bottom.	Temperature.
			Air.	Bottom used.		
31 B.	Sept. 2	o / o /	42 19	70 29	Mud	60 { 41 }
32 B.	do	Massachusetts Bay	West of Stellwagen's Bank	23	Hard, rocky	58 { 48 }
33 B.	do	On Stellwagen's Bank	18	22	do	58 { 48 }
34 B.	do	East of Stellwagen's Bank	11	44	Sand	61 { 41 }
35 B.	do	Between Stellwagen's Bank and Race Point	15	34	do	59 { 44 }
36 B.	do	23 miles ENE. 4 N. from Race Point	49	142	Soft blue mud	59 { 50 }
37 B.	do	19 1/2 miles NE. from Race Point	00	117	do	58 { 42 }

No record exists of any hauls corresponding to Nos. 11 B. and 19 B.

DREDGINGS BY THE BACHE, 1874.*

38 B.	Sept. 2	o /	42 48 ¹ ₂	70 37	Soft blue mud	66 { 45 }
39 B.	do	42 51 ¹ ₂	70 36 ¹ ₂	Thatcher's Island Light, about 10 miles south	70 69 { 45 }	
40 B.	do	42 54 ¹ ₂	70 35 ¹ ₂	Thatcher's Island Light, about 13 miles south	70 69 { 47 }	
41 B.	do	42 57 ¹ ₂	70 35	Thatcher's Island Light, about 16 miles south	70 69 { 47 }	
42 B.	Sept. 3	43 0 ¹ ₂	70 20	Boon Island Light, N. by W. 6 miles	68 { 47 }	
43 B.	do	43 0 ¹ ₂	70 28	Boon Island Light, N. by E.; hotel on Isles of Shoals, SW. by W. 1/2 W.	43 { 52 }	
44 B.	do	43 0 ¹ ₂	70 35	Star Island, SW; Duck Island, W	25 { 52 }	
45 B.	Sept. 4	43 0 ¹ ₂	70 11 ¹ ₂	Boon Island Light, WNW. 12 ¹ ₂ miles	88 { 51 }	
46 B.	do	43 0 ¹ ₂	70 04	Agamenticus Mountain, N. by W. 1/2 W.	51 { 40 }	
47 B.	do	43 0 ¹ ₂	70 03	Jeffrey's Ledge, near No. 46 B.	65 { 42 }	
48 B.	do	43 0 ¹ ₂	70 03 ¹ ₂	Jeffrey's Ledge, near No. 47 B.; Agamenticus Mountain, NW. 1/2 W.	25 { 42 }	
49 B.	do	43 0 ¹ ₂	69 52	Boon Island Light, WNW. 27 miles	36 { 47 }	
50 B.	do	43 0 ¹ ₂	69 45	W. of Cashe's Ledge	113 { 64 }	
51 B.	Sept. 5	42 0 ¹ ₂	69 08	Mud and gravel	100 { 65 }	
52 B.	do	42 51	68 52 ¹ ₂	Cashe's Ledge	105 { 65 }	
53 B.	do	42 51	68 50	Rock and gravel	27 { 42 }	
54 B.	do	42 49	68 48 ¹ ₂	Soft mud	73 { 63 }	
55 B.	do	42 53 ₁ ₂	68 53 ₁ ₂	Mud	110 { 61 }	
	do	42	40	Gravel	40 { 43 }	

* The surface temperatures taken this year were quite unreliable, in consequence of an erroneous method of observation.

DREDGINGS BY THE BACHE, 1872.

[The letters preceding the serial numbers are the same used to distinguish the hauls in Smith and Harger's Report on the Saint George's Bank Dredgings (Trans. Conn. Acad., vol. iii), and in Professor Verill's papers in American Journal of Science. The bottom temperatures this year are quite unreliable, manifestly too high in general.]

Serial number.	Date.	Latitude.	Longitude.	Locality.	Nature of bottom.	Apparatus used.	
						Bottom.	Air.
101 Bl.	July 21	° 43'	° 0'	Cape Elizabeth Light, NW. $\frac{1}{2}$ W.; Portland Head Light, N. by W.	Gravelly.....	o	o
102 Bl.	July 22	43 44	70 03 $\frac{1}{2}$	Casco Bay, Stockman's Island, W.; Upper Flag Island, E. by S.	Sandy.....	51	44 $\frac{1}{2}$
103 Bl.	do	43 42	70 03 $\frac{1}{2}$	Casco Bay, Broad Sound, Bates Island, W.; Eagle Island, E.	22-34 Gravel, br. shells.....	57	50
104 Bl.	July 24	43 41 $\frac{1}{2}$	70 08	Casco Bay, Luckses' Sound.....	12 $\frac{1}{2}$ Muddy.....	80	56 $\frac{1}{2}$
+ 105 Bl.	do	43 41 $\frac{1}{2}$	70 08	Casco Bay, Broad Sound, between Stockman's and Little Birch Islands.	16 $\frac{1}{2}$ Fine sand.....	84	49 $\frac{1}{2}$ T.
+ 106 Bl.	July 26	do	do	Casco Bay, Broad Sound, between Eagle and Bates Islands.	21 Gravel.....	80	65 45 $\frac{1}{2}$
+ 107 Bl.	do	do	do	Casco Bay, Broad Sound, between Stockman's and Upper Flag Islands.	16 $\frac{1}{2}$ Sand.....	68	56 $\frac{1}{2}$ 47 $\frac{1}{2}$
+ 108 Bl.	do	do	do	Casco Bay, Bluelight Cove (channel between Peaks, Great and Little Hog Islands).	57 $\frac{1}{2}$ Muddy.....	60 $\frac{1}{2}$ 59	56
+ 109 Bl., 110 Bl.	July 27	do	do	Casco Bay, Bluelight Cove, off Evergreen Landing.	3 do.....	61	56
111 Bl.	July 28	43 40	70 12	Portland Harbor, between Fort Gorges and Fort Preble.	3 Hard.....	65	60
112 Bl.	do	43 39 $\frac{1}{2}$	70 13 $\frac{1}{2}$	Bluelight Cove.....	3 Muddy.....	65	59
+ 113 Bl.	do	do	do	do.....	3 do.....	65	60
+ 114 Bl.	July 29	do	do	do.....	1 $\frac{1}{2}$ do.....	66	62
115 Bl.	do	do	do	do.....	2 do.....	60	58
116 Bl.	do	do	do	do.....	2 do.....	66	60
+ 117 Bl.	July 30	43 43	70 05 $\frac{1}{2}$	Casco Bay, Broad Sound, between Little Bangs and Slave Islands.	9-12 Soft gravel, br. shells.....	66	53
+ 118 Bl.	do	do	do	Casco Bay, Broad Sound, between Stockman's and Little Birch Islands.	17 (14) Sand, gravel, shells.....	66	53
+ 119 Bl.	do	do	do	Bluelight Cove.....	1 $\frac{1}{2}$ Muddy.....	68	64
+ 120 Bl.	do	do	do	do.....	2 do.....	70	61
+ 121 Bl.	do	do	do	Portland Light, SSW. $\frac{1}{2}$ of a mile.	13 $\frac{1}{2}$ Sandy.....	69	59 $\frac{1}{2}$
+ 122 Bl.	July 31	43 38	70 12 $\frac{1}{2}$	Bluelight Cove.....	2 Muddy.....	71	58
+ 123 Bl.	do	do	do	do.....	2 do.....	66	59
+ 124 Bl.	do	do	do	do.....	2 do.....	62	56
+ 125 Bl.	Aug. 1	43 42	70 07	Casco Bay, Luckses' Sound, between Hope and Crotch Islands.	2 do.....	62	56
+ 126 Bl.	Aug. 2	43 42	70 07	Casco Bay, Harpswell Sound, SW. end of Bailey's Island, S. by E.; Ram Island, N. by W.	11 do.....	71	47
+ 127 Bl.	do	43 44	70 01	Casco Bay, between Cow Island and Cow Island Ledge.	12 $\frac{1}{2}$ do.....	60	45
+ 128 Bl.	do	43 42	70 11	Bluelight Cove.....	9 Sandy mud, gravel, shells.	60	63 $\frac{1}{2}$
+ 129 Bl.	do	43 41 $\frac{1}{2}$	70 10 $\frac{1}{2}$	do.....	2 Muddy.....	68	63 57 $\frac{1}{2}$
+ 130 Bl.	Aug. 3	43 41 $\frac{1}{2}$	70 10 $\frac{1}{2}$	do.....	2 do.....	66	61 57
+ 131 Bl.	Aug. 4	43 41 $\frac{1}{2}$	70 10 $\frac{1}{2}$	Casco Bay, Cow Island, W. $\frac{1}{2}$ mile.	12 Gravelly.....	66	61 51

DREDGING STATIONS OF U. S. FISH COMMISSION.

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132 Bl.	do	43	40	70	05	Casco Bay, between Halfway Rock and Inner Green Island	123	Gravel and shells.....
133 Bl.	do	43	38 ¹	70	03 ⁴	Mouth Casco Bay, Halfway Rock, E. by N., about 3 miles.	19	Sandy and rocky.....
134 Bl.	do	43	40 ²	70	03 ⁴	Mouth Casco Bay, Halfway Rock, SSE; Eagle Island, NE. ¹ N.	18 ³	Coarse sand, gravel.....
135 Bl.	do	do	do	do	do	Bluelight Cove.....	34	Muddy.....
136 Bl.	do	do	do	do	do	do.....	3	do.....
137 Bl.	Aug. 5	43	35 ³	70	04 ³	West Cod Ledge, off Portland, Cape Elizabeth, W. $\frac{1}{2}$ S.;	13	Sandy and rocky.....
138 Bl.	do	43	32	69	58	Halfway Rock Light, NE. $\frac{1}{2}$ N.	48-54	Muddy.....
139 Bl.	Aug. 6	do	do	do	do	Portland Head Light, NW. $\frac{1}{2}$ N., 15 miles; Seguin Island, NE. by E. 15 miles ('18 miles off Cape Elizabeth' D. L.)	3	do.....
140 Bl.	do	do	do	do	do	do.....	48-64 ²	do.....
141 Bl.	do	do	do	do	do	do.....	48-64 ²	do.....
142 Bl.	do	do	do	do	do	do.....	48	Stones and mud
143 Bl.	do	do	do	do	do	do.....	64	Muddy.....
144 Bl.	do	do	do	do	do	do.....	2	do.....
145 Bl.	do	do	do	do	do	do.....	2	do.....
146 Bl.	do	do	do	do	do	do.....	7	Mud, dead eel-grass.....
147 Bl.	do	do	do	do	do	do.....	25	Gravelly.....
148 Bl.	do	do	do	do	do	do.....	15	Soft mud
149 Bl.	do	do	do	do	do	do.....	13	Sandy, with shells
150 Bl.	do	do	do	do	do	do.....	68	Muddy
151 Bl.	do	do	do	do	do	do.....	12	Sandy
152 Bl.	do	do	do	do	do	do.....	33	Sandy and rocky, some mud
152 ² Bl.	do	do	do	do	do	do.....	64	do.....
153 Bl.	do	do	do	do	do	do.....	3	Mud.....
154 Bl.	do	do	do	do	do	do.....	9	Sand and mud
155 Bl.	do	do	do	do	do	do.....	9	Muddy
156 Bl.	do	do	do	do	do	do.....	2	do.....
157 Bl.	do	do	do	do	do	do.....	75	do.....
158 Bl.	do	do	do	do	do	do.....	40	Sand and gravel, rocks
159 Bl.	do	do	do	do	do	do.....	2	Muddy
160 Bl.	do	do	do	do	do	do.....	2	do.....
161 Bl.	do	do	do	do	do	do.....	2	do.....
162 Bl.	do	do	do	do	do	do.....	2	do.....
163 Bl.	do	do	do	do	do	do.....	2	do.....
164 Bl.	do	do	do	do	do	do.....	11-14	Rocky
165 Bl.	do	do	do	do	do	do.....	5	Muddy
166 Bl.	do	do	do	do	do	do.....	6	do.....
167 Bl.	do	do	do	do	do	do.....	16	Mud
168 Bl.	do	do	do	do	do	do.....	17	Rocky
169 Bl.	do	do	do	do	do	do.....	(1)	Sand and rocks
170 Bl.	do	do	do	do	do	do.....	(1)	Sand and stones
171 Bl.	do	do	do	do	do	do.....	20	Casco Bay, off Hog Island

DREDGINGS BY THE BLUELIGHT, 1873—Continued.

Serial number.	Date.	Latitude.	Longitude.	Locality.	Nature of bottom.	Temperature.		Depth in fathoms.	Bottom.	Surface.	Apparatus used.
						Air.	T.				
+ 172 Bl.	July 11	o 1	o 7	Casco Bay, off Crotch Island	(?)	16	Clean gravel			o o	T.
173 Bl.	July 14			Casco Bay, off Overset Island		15-19	Sand and sponge				
+ 174 Bl.	do			Casco Bay, off mouth of Bluelight Cove, drifting north		15	Sand				
+ 175 Bl.	do			Casco Bay, off north end of Hog Island		15	Mud				
+ 176 Bl.	do	43 44	70 04	Casco Bay, between Great Cheopag and Basket Islands		7-8					
+ 176a Bl.	do			do (7)		(?)					
+ 177 Bl.	July 15			Casco Bay, off North end of Long Island		(?)	Mud				
+ 178 Bl.	do			Mouth Casco Bay, off Inner Green Island		22	Rocky				
+ 179 Bl.	do			do		17	Sandy				
+ 180 Bl.	do	43 40	70 04	Casco Bay, off Jewell's Island		(?)	(?)				
+ 181 Bl.	July 16			do		(?)	Muddy				
+ 182 Bl.	do			do		15-23	Shelly and Spongy				
+ 183 Bl.	do			do		(?)	do				
+ 184 Bl.	July 17	43 36	70 02	Off Portland, ENE. of West Cod Ledge		14-20	Hard and rocky				
+ 185 Bl.	do			Off Portland, WSW. of West Cod Ledge 1½ miles		10-15	do				
+ 186 Bl.	do			Off Portland, near 165 Bl.		10	do				
+ 187 Bl.	do	43 34	70 08	Off Portland, SSW. of West Cod Ledge 3 miles		20-22	do				
+ 188 Bl.	July 18			Casco Bay, between Cow Island and Crow Island		17	Sandy				
+ 189 Bl.	do			do		13½	Sand and stones				
+ 190 Bl.	do			Casco Bay, between Cow Island and Crow Island		14	do				
+ 191 Bl.	July 21	43 36	70 04	Entrance to Portland Harbor, little west of 122 Bl.		28	Mud and stones				
+ 192 Bl.	do			do		10	Rocky and shelly				
+ 193 Bl.	July 22			Casco Bay, off Whaleboat Island		(?)	(?)				
+ 194 Bl.	July 24			Casco Bay, off Bateman's (Bates') Island		13½	Gravel and br. shell				
+ 195 Bl.	do			Casco Bay, between Ministerial and Eagle Islands, the monument on Mark Island showing over north end of Eagle Island		32	Gravel and stones				
+ 196 Bl.	July 31	43 35	70 01	Off Portland, 1 mile east of East Cod Ledge		(?)	(?)				
+ 197 Bl.	do			Entrance to Portland Harbor, near 192 Bl.		11	Hard				
+ 198 Bl.	Aug. 4	43 46	70 05	Casco Bay, Haddock Grounds, Broad Sound		12-18	Gravel and shells				
+ 199 Bl.	do	43 43	70 10	Casco Bay, off Chebeag Point		11½	Mud				
+ 199a Bl.	do	43 39	69 38	Casco Bay, between Great and Little Chebeag Islands		(?)	Muddy				
+ 200 Bl.	Aug. 13	43 37	69 51	Seguin Island, NW. 6 miles (see 152 Bl.)		35	Rocky and sandy				
+ 201 Bl.	Aug. 20	43 37	69 51	Seguin Island, NW. 5 miles		45	(?)				
+ 202 Bl.	Aug. 25			Off Portland, East Cod Ledge		18	Rock and sponges				
+ 203 Bl.	Aug. 27			Casco Bay, between Peaks Island and Overset Island		27½	Sand, gravel, shells, mud				
+ 204 Bl.	do	43 37	70 04	Off mouth Casco Bay, 2 miles off Halfway Rock; the locality mentioned on page 357 of Professor Verill's Exploration of Casco Bay, Proc. Am. Acad. Sci., 1873.							

DREDGING STATIONS OF U. S. FISH COMMISSION.

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STATIONS FOR 1874 AND 1875, WITH HEADQUARTERS AT NOANK, CONN., AND WOOD'S HOLL, MASS.

In 1874, the headquarters of the United States Fish Commission were established at Noank, Conn., and the area covered by its dredgings included Fisher's Island Sound; the eastern part of Long Island Sound; Block Island Sound; and Gardiner's and Peconic Bays; and also extended some distance to the east, south, and southwest of Block Island. In 1875, with headquarters at Wood's Holl, Mass., dredgings were carried on in Vineyard and Nantucket Sounds; Buzzard's Bay; over a portion of Nantucket Shoals; to the southward of Nantucket Island and Martha's Vineyard; and also on and about Southwest Shoal. The dredgings were all made by the United States steamer Bluelight, Commander L. A. Beardslee, and a separate series of numbers, to designate the stations, was employed for each year. To facilitate the recording of all the dredging stations of the United States Fish Commission on charts, and to bring the southern ones into uniformity with those made to the north of Cape Cod in more recent years, and already recorded both on charts and in reports prepared for publication in a single series of numbers ranging from 1 to 378, 400 has been added to the 1874 dredgings and 600 to those of 1875. In this way all the dredging stations from 1874 to 1879, inclusive, are included in a single series.

The temperature observations recorded in the two following tables were mostly taken with much care. Former experiences had proved that the Miller-Casella thermometers were slow in acting, requiring from three to ten minutes (according to the depth of water) to obtain a correct reading, and they were, therefore, always left down a suitable length of time. The bottom and surface temperatures, in nearly all cases, were taken with Miller-Casella self-registering thermometers; occasionally a United States naval thermometer was employed for surface temperatures, and the same instrument was generally employed for the air.

STATIONS FOR 1874.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
401	1874. July 13	Fisher's Island Sound, West Clump, bearing S.	7½	Mud	•	•	◦	D.
402	13	Fisher's Island Sound.....	9½	Sand.....				D.
403	13	.....do.....	11½	....do.....				D.
404	13	Fisher's Island Sound, off Latimer's Reef. (No record.)	3½	Rocky				D.
405								
406	July 14	Fisher's Island Sound, N. of Young's Rock.	11	Rocky				D.
407	14	Fisher's Island Sound, NW. of Seal Rocks.	9	Sand, stones				D.
408	14	Fisher's Island Sound, N. by E. of Wicopeessit.	11½	Clay				D.
409	14	Fisher's Island Sound, Lord's Channel.	11½	Rocky				Tan.
410	14	Fisher's Island Sound, off Napatare Point.	2½	Sand.....				T.
411	16	Watch Hill Light-House, R. I., NNW., distant about ½ mile.	11do				D.

DREDGING STATIONS OF U. S. FISH COMMISSION.

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STATIONS FOR 1874—Continued.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
412	1874. July 16	Watch Hill Light NNE., distant nearly $\frac{1}{2}$ mile.	5	Rocky	°	°	°	Tan.
413	16	do	5	do				Tan.
414	16	Fisher's Island Sound, off Groton Long Point.	7	Gravel				D.
415	16	Fisher's Island Sound, Groton Long Point NW. by N. $\frac{1}{2}$ mile.	7	do				D.
416	17	Fisher's Island Sound, $\frac{3}{4}$ mile W. by N. of N. Hammock Light-House.	6	Sand, mud				D.
417	17	Long Island Sound, New London Light N. by W., distant about $2\frac{1}{2}$ miles.	8	Sand				D.
418	17	Long Island Sound, New London Light N., distant $1\frac{1}{2}$ miles.	9	Sand, mud				T.
419	17	Long Island Sound, Little Gull Island Light bearing S. by E. 2 miles.	40	Gravel				D.
420	20	Fisher's Island Sound, $\frac{1}{4}$ mile N. of West Clump.	11 $\frac{1}{2}$	...do				D.
421	20	Fisher's Island Sound, N. Hammock Light W. by S. $\frac{1}{2}$ mile.	12 $\frac{1}{2}$	Sand, gravel				D.
422	20	Fisher's Island Sound, N. Hammock Light S. by W. $\frac{1}{2}$ W. $\frac{1}{4}$ mile.	13	...do				D.
423	20	Fisher's Island Sound, N. Hammock Light E. $\frac{1}{3}$ mile.	17	Gravel				D.
424	20	Fisher's Island Sound, N. Hammock Light E. by N. 1 mile.	7 $\frac{1}{2}$	Sand, mud				D.
425	20	Fisher's Island Sound, N. Hammock Light NE. by E. $\frac{1}{3}$ E. $1\frac{1}{4}$ miles.	10 $\frac{3}{4}$	Mud				D.
426	20	Fisher's Island Sound, near Middle Clump.	8	Sand				T.
427	22	Fisher's Island Sound, $\frac{1}{4}$ mile NW. of Middle Clump.	11 $\frac{1}{4}$ -9 $\frac{1}{2}$	Sand, shells	65	64	62.5	D.
428	22	Fisher's Island Sound, $\frac{1}{4}$ mile NNW. of Middle Clump.	11	...do	65	64	62.5	D.
429	22	Fisher's Island Sound, $\frac{1}{8}$ mile NNE. of W. Clump.	8	...do	65	64	63	D.
430	23	Fisher's Island Sound, Eelgrass Light-Ship E. by W., distant $\frac{1}{2}$ mile.	7	Sand, gravel	60	64	62.5	D.
431	23	Fisher's Island Sound, between Latimer's Reef and Young's Rock.	10 $\frac{1}{2}$	Sand, gravel, shells.	65.5	62.5	61.5	D.
432	23	Fisher's Island Sound, eastward of Latimer's Reef.	11	Coarse sand, shells, rocks.	65	62.5	61	D.
433	24	Fisher's Island Sound, Groton Long Point NE. by N., distant $\frac{1}{2}$ mile.	8	Sand, shells	72	66	63	D.
434	24	Fisher's Island Sound, between Sea-Flower Reef and Groton Long Point.	7	...do	71	65.5	62.5	D.
435	24	Long Island Sound, Race Point bearing E., distant $2\frac{1}{2}$ miles.	50	Rocky, with mus-sels.	72	68	59	D.
436	24	Long Island Sound, about $\frac{1}{4}$ mile SW. of 435.	50	Rocks, gravel	68	68	58	D.
437	24	Block Island Sound, off Culloden Point, Long Island.	12 $\frac{1}{2}$	Sand, mud	74	66	61	T.
438	24	Block Island Sound, NW. of Culloden Point, Long Island.	12	Sand				D.
439	27	Fisher's Island Sound, eastern part of Sweeper Sound.	4	Sand, shells	70.5	66.5	65	D.
440	27	Fisher's Island Sound, house on Ram Island bearing NE. $\frac{1}{3}$ E.	4	Sand	68.5	66.5	65.5	D.
441	27	Fisher's Island Sound, SW. of Ram Island $\frac{1}{2}$ mile.	3 $\frac{1}{2}$	...do	68.5	66.5	65	D.
442	27	Fisher's Island Sound, off Middle Clump.	14	Stones, gravel	68.5	66.5	64	D.
443	27	do	10 $\frac{1}{2}$	...do	67	66	64.5	D.
444	29	Fisher's Island Sound, NW. of Eel grass Light-Ship, distant about $\frac{3}{4}$ mile	7	Sand, gravel, shells				D.

STATIONS FOR 1874—Continued.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
445	1874. July 30	Block Island Sound, SE. $\frac{1}{2}$ E. of Race Rock nearly 3 miles; E. of Little Gull Island Light-House $5\frac{1}{2}$ miles.	45	Sand.....	76°	62.5	57°	D.
446	30	Block Island Sound, $\frac{5}{8}$ mile about W. by S. of 445.	40	do .....	.....	.....	.....	D.
447	30	Block Island Sound, $1\frac{1}{2}$ miles about W. by S. of 445.	24	do .....	.....	.....	.....	D.
448	30	Mouth of Gardiner's Bay, Long Island, Gardiner's Point Light- House S. about $\frac{3}{4}$ mile.	14 $\frac{1}{2}$	Gravel.....	71	66	63.5	D.
449	30	Gardiner's Bay, Long Island....	6 $\frac{1}{2}$	Mud.....	71.5	67.5	64.5	D.
450	30	do	4 $\frac{1}{2}$	Sand.....	72	66.5	65	D.
451	30	do	3	Gravel.....	72	66.5	65	T.
452	30	do	6 $\frac{1}{2}$	Mud.....	69.5	68.5	65	D.
453	31	Block Island Sound, Watch Hill Light N. by W. 3 miles.	18	Sand.....	68	66	56	D.
454	31	Block Island Sound, Watch Hill Light N. by E. 3 miles.	18 $\frac{1}{2}$	Mud, shells .....	.....	.....	.....	T.
455	Aug. 3	Long Island Sound, Bartlett's Reef Light-Ship E. about $1\frac{1}{2}$ miles.	22	Sand, mud	60.5	64.5	63.5	D.
456	3	Long Island Sound, Bartlett's Reef Light-Ship E. about $2\frac{1}{2}$ miles.	14	Gravel, sand	59	64	63	D.
457	3	Long Island Sound, Bartlett's Reef Light-Ship E. $\frac{1}{2}$ N. about 3 miles.	15 $\frac{1}{2}$	Sand, gravel, shells	67	64.5	63.5	D.
458	3	Long Island Sound, Hatchett's Point NW. about 2 miles.	19	Gravel, shells	61.5	64	63	D.
459	3	Long Island Sound, off Say- brook, Conn.	4	Sand.....	67	64.5	63.5	T.
460	3	Long Island Sound, between Cornfield Point and Long Sand Shoal.	9	.....	.....	.....	.....	T.
461	4	Little Peconic Bay, Long Island.	7 $\frac{1}{2}$	Gravel, shells	66.5	74	71.5	D.
462	4	do	7	Sand, shells .....	.....	.....	.....	D.
463	4	do	7	Gravel .....	.....	72	.....	T.
464	4	do	13 $\frac{1}{2}$ -10	Sand, gravel	67	72	71.5	D.
465	4	do	14	Sand, shells .....	.....	.....	.....	D.
466	4	Great Peconic Bay, Long Island.	5 $\frac{1}{2}$	Mud, sand, gravel.	67.5	74	72	D.
467	4	do	5 $\frac{1}{2}$	Sand	68	73	72.5	D.
468	4	do	4 $\frac{1}{2}$	Gravel	66.5	73	72.5	D.
469	4	Little Peconic Bay, Long Island.	9 $\frac{1}{2}$	Sand, shells	66	72.5	71	D.
470	4	do	4	Sand .....	.....	.....	.....	T.
471	5	Gardiner's Bay, Long Island....	3 $\frac{1}{2}$	do	70.5	68	.....	D.
472	5	do	4	Sand, shells .....	.....	.....	.....	T.
473	6	Block Island Sound, Watch Hill Light N. $\frac{1}{2}$ W., distant 3 miles.	18-23	Sand	63	63	59 { 60 }	T.
474	6	Block Island Sound, Montauk Point SW. $\frac{1}{2}$ S. 6 miles.	17	do .....	.....	63.25	60	D.
475	6	Block Island Sound, Block Isl- and and Light ENE, distant about 3 miles.	19 $\frac{1}{2}$	Mud .....	.....	63.5	60	D.
476	6	Block Island Sound, Block Isl- and and Light SE. by E. $\frac{1}{2}$ E. about 4 miles.	18 $\frac{1}{2}$	Sand, mud .....	.....	64	60	D.
477	6	Block Island Sound, Block Isl- and and Light ESE, about 7 miles.	19	Mud .....	.....	64	59	D.
478	6	Block Island Sound, Watch Hill Light NW. $\frac{1}{2}$ W. about 4 miles.	24	Sand	70	64	58.5	D.
479	6	Block Island Sound, Watch Hill Light NW. $\frac{1}{2}$ N. about 3 miles.	22	Sand, shells .....	.....	.....	.....	T.
480	10	In West Harbor of Fisher's Isl- and.	4	Sand	74	66.5	65.25	D.
481	10	do	3 $\frac{1}{2}$	do	74	66.5	65.25	D.
482	10	In West Harbor of Fisher's Isl- and, off Clay Point.	5 $\frac{1}{2}$	Sand, mud	74	66.5	.....	T.
483	10	Off Hawk's Nest Point, inner side of Fisher's Island.	5 $\frac{1}{2}$ -2 $\frac{1}{2}$	Sand, gravel, to mud and weeds.	74	.....	.....	T.
484	10	Fisher's Island Sound, between Middle Clump and Ram Isl- and and Reef.	12 $\frac{1}{2}$	Mud, shells	73.5	69	64.75	D.
485	11	Block Island Sound, about 1 mile S. of E. end of Fisher's Island.	15	Sand	75	66	61	D.

STATIONS FOR 1874—Continued

Serial number.	Date.	Locality.	Depth in fath. oms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
	1874.							
486	Aug. 11	Block Island Sound, about $\frac{2}{3}$ mile S. of E. end of Fisher's Island.	8 $\frac{1}{2}$	Sand.....	75	65.5	62.5	D.
487	11	Block Island Sound, about $\frac{1}{2}$ mile off centre of Fisher's Island.	8	Stones.....	72	65.5	63	D.
488	11	Block Island Sound, off Mount Prospect, Fisher's Island, about $\frac{1}{2}$ mile from land.	7 $\frac{1}{2}$	do	76	66.5	63	D.
489	11	Block Island Sound, about $\frac{1}{2}$ mile westward of 488.	6	Stones, gravel.....	78	66.5	63.25	D.
490	11	Block Island Sound, about $\frac{2}{3}$ mile SE. of Race Point.	5 $\frac{1}{2}$	do	76.5	66.5	63.25	D.
491	11	Block Island Sound, about 1 $\frac{1}{4}$ miles S. of Mount Prospect.	32 $\frac{1}{2}$	Sand, shells.....	75	66.5	58.5	T.
492	12	Noank Harbor.....	2	Mud.....	-----	-----	-----	D.
493	12	Fisher's Island Sound, between Sea-Flower and Horse-Shoe Reefs.	4 $\frac{1}{2}$	Sand.....	76	67.5	62.5	D.
494	12	do	4 $\frac{1}{2}$	Sand, gravel.....	75	67	64.5	D.
495	12	Fisher's Island Sound, W. of Sea-Flower Reef Beacon.	6	Fine sand and mud.....	67	67	64.5	T.
496	12	Fisher's Island Sound, W. of Sea-Flower Reef Beacon about 1 mile.	6	Sand, mud	72	67	64.5	T.
497	13	Block Island Sound, Montauk Point Light SSE. about 6 miles.	15 $\frac{1}{2}$	Sand.....	74	65	64	D.
498	13	Block Island Sound, Montauk Point Light SSE. about 6 $\frac{1}{2}$ miles.	9	Fine sand and gravel.	71	65	64	D.
499	13	Block Island Sound, Montauk Point Light SSE. about 7 $\frac{1}{4}$ miles.	5 $\frac{1}{2}$	Coarse sand and rocky.	72	65	64	D.
500	13	Block Island Sound, Montauk Point Light S. by E. $\frac{1}{4}$ miles.	19	Fine sand.....	72	65	63.5	D.
501	13	Block Island Sound, Montauk Point Light S. by W. about 3 miles.	20-8	Sand, shells	72	66	63.5	D.
502	13	Block Island Sound, Montauk Point Light SSW. about 2 $\frac{1}{2}$ miles.	8	Stony.....	72.5	65	65	D.
503	13	Off Montauk Point, Light-House WSW. about 2 miles.	7 $\frac{1}{2}$	Rocky	72	65	64.5	D.
504	13	Off Montauk Point, Light-House W. about 2 miles.	7 $\frac{1}{2}$	do	72	65	64.5	D.
505	14	Fisher's Island Sound, between Eelgrass Light-Ship and White Rock.	5 $\frac{1}{2}$	Sand, gravel	67	66	64.5	D.
506	14	Fisher's Island Sound, about 1 mile E. by N. from Eelgrass Light-Ship.	6	do	67	-----	-----	D.
507	14	Fisher's Island Sound, Stonington Light NE. $\frac{1}{2}$ E. about 1 mile.	5	Sand.....	67	-----	-----	T.
508	14	Fisher's Island Sound, Eelgrass Light-Ship WNW. $\frac{1}{2}$ mile.	5 $\frac{1}{2}$	Rocky	67	-----	-----	D.
509	17	Fisher's Island Sound, Eelgrass Light-Ship NW. by W. about $\frac{2}{3}$ mile.	7	Stones	69.5	67	63	D.
510	17	Fisher's Island Sound, Eelgrass Light-Ship WNW. 1 mile.	6 $\frac{1}{2}$ -8 $\frac{1}{2}$	Sand, rocky	69.5	67	63	D.
511	17	Fisher's Island Sound, Eelgrass Light-Ship W. by N. about 1 $\frac{1}{4}$ miles.	5 $\frac{1}{2}$	Hard, rocky	69	-----	-----	Tan.
512	17	Fisher's Island Sound, Stonington Light ENE. about 1 $\frac{1}{4}$ miles.	4	Sand	69	66.5	60.5	D.
513	17	Fisher's Island Sound, Eelgrass Light-Ship W. $\frac{1}{2}$ N. about 1 mile.	7	Hard, stones	70	67	63	D.
514	17	Fisher's Island Sound, Eelgrass Light-Ship E. about 1 mile.	7 $\frac{1}{2}$	Sand.....	70	66.5	63	D.
515	18	Off Block Island, Montauk Point W. about 9 miles.	20	do	71	66	47.5	D.
516	18	Off Block Island, Montauk Point NW. by W. $\frac{1}{2}$ W. about 11 miles.	25	Sand, shells	70	67.5	45.5	D.
517	18	do	23 $\frac{1}{2}$	do	70	-----	-----	D.
518	18	do	23 $\frac{1}{2}$	do	70	-----	-----	D.
519	18	Off Block Island, Old Harbor Point, Block Island N. 5 miles.	11	Sand, stones	67	55	-----	D.

STATIONS FOR 1874—Continued.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
520	1874. Aug. 18	Off Block Island; Old Harbor Point, Block Island, N. 5 miles.	11	Sand, stones	70	o	o	D.
521	18	Off New Shoreham, Block Island	14	Gravel, stones	70	66	57.5	D.
522	18	do	18	Sand, gravel	70	66.5	52.5	D.
523	19	Off Block Island, New Shoreham N.W. by N. about 6 miles.	14	do	73	66.5	54	D.
524	19	Off Block Island, New Shoreham N.N.W.	14½	Coarse sand	73	66	50.5	D.
525	19	Off Block Island, SE. side	14½	Gravel	69.5	66.5	53	D.
526	19	SE. from Point Judith, Rhode Island, about 4 miles.	13½	Sand, gravel	75	67.5	54.5	D.
527	19	S. from Point Judith, Rhode Island, and, about 2½ miles.	9	Stones .....	.....	69.5	61	D.
528	19	W. from Point Judith, Rhode Island, about 3 miles.	4	Rocks, sand	76	67.5	63	D.
529	19	Off Narragansett Beach, Rhode Island.	8½	Sand, gravel .....	.....	.....	.....	T.
530	19	do	10½	Stones, gravel .....	.....	.....	.....	T.
531	21	Block Island Sound, Watch Hill Light N. ½ E., distant 3 miles.	21	Sand	80	67.25	56.5	D.
532	21	Block Island Sound, SW. ¾ S. of No. 531, distant ½ mile.	20	do	80	67.25	.....	T.
533	21	Block Island Sound, WSW. of No. 531, distant ½ mile.	17½	do	79.5	67.25	.....	T.
534	21	Block Island Sound, about S. ¾ E. of east point of Fisher's Island ½ mile.	9	Gravel	78	66.5	63.5	D.
535	21	Block Island Sound, east end of Fisher's Island N. by E. about 2 miles.	19½	Sand	78	67	57.5	D.
536	24	Fort Pond Bay, east end of Long Island.	7½	Mud	76	73.5	65.5	D.
537	24	Off Fort Pond Bay, east end of Long Island.	6½	Sand, gravel .....	.....	.....	.....	T.
538	24	Napeague Bay, off Culloden Point, Long Island.	8½	Sand .....	.....	67.5	65.5	D.
539	24	Napeague Bay, east end of Long Island.	5-8	do .....	.....	.....	.....	T.
540	24	do	6-7	do .....	.....	.....	.....	D.
541	24	Block Island Sound, Race Point N. about 1½ mile.	42	Stony	70.5	66	.....	D.
542	25	Off Hay Harbor, west end of Fisher's Island.	4½	Sand	70	65.5	64.5	D.
543	25	Off west end of Fisher's Island, Race Point about S., distant ½ mile.	7½	Mud, sand	70	65.5	64.5	D.
544	25	Off west end of Fisher's Island, Race Point SSE. 1 mile.	8½	Fine sand .....	.....	.....	.....	T.
545	25	Off west end of Fisher's Island, Race Point about S. ¼ mile.	5½	Rocks .....	.....	.....	.....	D.
546	25	Fisher's Island Sound, between East Clump and Ram Island buoy.	7½	Hard	74.5	65.5	65	D.
547	25	do	14	do .....	.....	.....	.....	D.
548	25	Fisher's Island Sound, ESE. from house on Ram Island.	7½	do .....	.....	.....	.....	D.
549	27	Off Niantic Bay, Connecticut, W. of Two-Tree Island.	5	Sand	70.5	65	64	D.
550	27	Off Niantic Bay, Connecticut, between Black Point and Two-Tree Island.	5½	do .....	.....	.....	.....	T.
551	27	do	5½	do .....	.....	.....	.....	D.
552	27	Long Island Sound, off Saybrook	6	do .....	.....	.....	.....	D.
553	27	Long Island Sound, Saybrook Light NE. 2 miles.	7½	do .....	.....	.....	.....	T.
554	27	Long Island Sound, Plum Island Light SE. by E. 3 miles.	22	Gravel	73.5	66	65	D.
555	.27	do	26	do	73.5	66	65	D.
556	30	Off Cox Ledge, ESE. from Block Island about 20 miles. (The shallowest part of Cox Ledge lies in about 11½' N. Lat. and 71° 02' W. Long.)	20	Rocky .....	.....	.....	.....	D.
557	30	Off Cox Ledge	21½	Sand, rocks	67	62	51.5	D.
558	30	do	21	do .....	.....	.....	.....	Tan.
559	30	do	21	do .....	.....	.....	.....	D.

STATIONS FOR 1874—Concluded.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
560	1874. Aug. 30	About 11 miles SE. by E. from Old Harbor Point, Block Island.	21	Rocky	o	o	o	Tan.
561	30	About 10 miles SE. by E. from Old Harbor Point, Block Island.	34	Mud	70	64	52	D.
562	30	.....do.....	34	....do.....	70	64	52	D.
563	31	Block Island Sound, Watch Hill Light N. by W. about $3\frac{1}{2}$ miles.	19	Sand				T.
564	31	Block Island Sound, Watch Hill Light N. by W. $\frac{1}{2}$ W. about $3\frac{1}{4}$ miles.	18	Sand				O. T.
565	31	Block Island Sound, Watch Hill Light NNW. about $3\frac{3}{4}$ miles.	17	....do.....				O. T.
566	31	Block Island Sound, Watch Hill Light NNW. about $3\frac{3}{4}$ miles.	18	....do.....				D.
567	Sept. 31	.....do.....	18	....do.....				D.
568	2	On Cox Ledge	19 $\frac{1}{2}$	Rocky				D.
569	2	.....do.....	20	Sand				D.
570	2	.....do.....	18 $\frac{1}{2}$	Rocky				D.
571	2	.....do.....	21	....do.....				D.
572	2	.....do.....	21	....do.....	72.5	62.5	50	D.
573	2	.....do.....	18 $\frac{1}{2}$	....do.....				D.
574	2	.....do.....	19	....do.....				D.
575	2	.....do.....	18	....do.....				D.
576	2	.....do.....	17	....do.....				D.
577	3	About 8 miles SSE. from Block Island.	19	....do.....				D.
578	3	Crab Ledge, about 7 miles SE. of Block Island.	10 $\frac{1}{2}$	....do.....				D.
579	3	Crab Ledge, about 8 miles SE. of Block Island.	10 $\frac{1}{2}$	....do.....				D.
580	3	About 7 miles off New Shore- ham, Block Island.	8-10	....do.....				D.

(There are no numbers 581-600.)

STATIONS FOR 1875.

601	1875. July 12	Vineyard Sound, Tarpaulin Cove Light W. by S., Job's Neck NE. by E. $\frac{1}{2}$ E.	11 $\frac{1}{2}$	Sand, gravel	70			D.
602	12	Vineyard Sound, Tarpaulin Cove Light WSW. 1 mile.	11	.....	70			D.
603	12	Vineyard Sound, Tarpaulin Cove Light NW. by W. $\frac{1}{2}$ mile.	17	.....	70			D.
604	12	Vineyard Sound, Menemsha Bight.	8	.....	70			D.
605	12	.....do.....	5-7	.....				D.
606	12	.....do.....	5-7	.....				D.
607	14	Vineyard Sound, Lackey's Bay	6 $\frac{1}{2}$	Gravel				D.
608	14	Between Martha's Vineyard and No Man's Land, Gay Head Light N. $\frac{1}{2}$ E. 2 $\frac{1}{2}$ miles.	10	Sand, shells				D.
609	14	North of No Man's Land, Lone Rock S. $\frac{1}{2}$ mile.	6	Rocky				D.
610	14	North of No Man's Land	4	Sand				T.
611	14	.....do.....	5	....do.....				D.
612	14	Vineyard Sound, Menemsha Bight.	8	....do.....				T.
613	14	Vineyard Sound, Tarpaulin Cove.	14 $\frac{1}{2}$	Gravel				D.
614	15	Vineyard Sound, S. and E. of Davis Neck Shoal.	5 $\frac{1}{2}$	Sand				D.
615	15	Vineyard Sound, S. of Monant Point.	15	Sand, gravel				D.
616	15	Vineyard Sound, off Davis Neck Shoal.	13	Sand				T.
617	15	Vineyard Sound, off East Chop of Holmes' Hole.	13 $\frac{1}{2}$	Hard				D.
618	15	Vineyard Sound, off Falmouth.	4 $\frac{1}{2}$	Sand				T.
619	15	.....do.....	5	....do.....				T.
620	20	Vineyard Sound, Cuttyhunk Light NW. by N. 2 $\frac{1}{2}$ miles, Sow and Pigs Light-Ship W. by N.	14	Hard				D.

STATIONS FOR 1875—Continued.

Serial number.	Date.	Locality.	Depth in fath. oms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
621	July 20	Vineyard Sound, Cuttyhunk Light NW. by N. $3\frac{3}{4}$ miles, Sow and Pigs Light-Ship WNW.	19	Hard	o	o	o	D.
622	20	Vineyard Sound, Cuttyhunk Light N. $1\frac{1}{4}$ miles, Sow and Pigs Light-Ship W. by N.	10	.....	.....	.....	.....	D.
623	20	do	.....	.....	.....	.....	.....	D.
624	20	Vineyard Sound, Menemsha Bight.	.....	.....	.....	.....	.....	T.
625	21	Nantucket Sound; Oak Bluffs Hotel W. by S., W. end of Squash Meadow E. by N.	5	Sand .....	.....	.....	.....	D.
626	21	Nantucket Sound, between Oak Bluffs and Squash Meadow.	6	.... do .....	.....	.....	.....	D.
627	21	do	6	.... do .....	.....	.....	.....	T.
628	21	Nantucket Sound, Oak Bluffs NW., Cape Poge SE. by E.	$5\frac{1}{2}$	.... do .....	.....	.....	.....	T.
629	21	Nantucket Sound, about same as 628.	$5\frac{1}{2}$	.... do .....	.....	.....	.....	T.
630	21	do	5	.... do .....	.....	.....	.....	D.
631	26	Nantucket Sound, Cross-Rip Light-Ship E. by S. $\frac{1}{2}$ mile.	$10\frac{1}{2}$	Sand	76	69	68.5	D.
632	26	Nantucket Sound, close to Cross-Rip Light-Ship.	$11\frac{1}{2}$	Sand, gravel, shells.	76	69	69	D.
633	26	Nantucket Sound, Cross-Rip Light-Ship W. by S. $\frac{3}{4}$ mile.	12	Sand, gravel	76	69	69	D.
634	26	Nantucket Sound, Cross-Rip Light-Ship WNW. about 1 mile.	10	.... do	76	69	69	D.
635	26	Nantucket Sound, Brant Point Light, Nantucket, S. by E. 4 miles.	$7\frac{1}{2}$	Muddy sand	76	71	69.5	D.
636	26	Nantucket Sound, Brant Point Light SSE. $2\frac{1}{2}$ miles.	8	Mud	76	.....	.....	D.
637	28	Nantucket Shoals, Sankaty Head Light west, distant 10 miles.	16	Sand, shells	59	58	58	D.
638	28	Nantucket Shoals, about same as 637.	$15\frac{1}{2}$	... do	59	58	58	T.
639	28	Nantucket Shoals, Sankaty Head Light west about 9 miles.	14	Sand	60	59	59	D.
640	28	Nantucket Shoals (a little S. of 639).	11	Sand, shells	60	59	59	D.
641	Aug. 4	Buzzard's Bay, Woapecket buoy W. by S. $\frac{3}{4}$ mile.	7	.... do	75	.....	.....	D.
642	4	Buzzard's Bay	8	Hard	68	67	67	D.
643	4	do	5	Sand	69	69	69	D.
644	4	do	5	.... do	75	69	69	D.
645	4	Buzzard's Bay, buoy No. 8 off Scraggy Neck NE. $\frac{1}{2}$ mile.	6	Sand, shells .....	.....	.....	.....	D.
646	4	Buzzard's Bay, off Cataumet Harbor.	6	Sand	75	.....	.....	T.
647	4	do	6	.... do	75	.....	.....	T.
648	4	Buzzard's Bay	6	.... do	75	.....	.....	D.
649	5	Vineyard Sound, Tarpaulin Cove Light N. 1 mile.	16	Hard	71	.....	.....	D.
650	5	do	18	.... do	71	68	67	D.
651	5	Buzzard's Bay, $\frac{3}{4}$ mile N. of Penikese.	16	Sand	65	64	64	D.
652	5	do	16	.... do .....	.....	.....	.....	D.
653	5	Buzzard's Bay	$8\frac{1}{2}$	Mud	71	68	66	D.
654	5	do	$9\frac{1}{2}$	Soft mud	71	.....	.....	D.
655	5	do	10	Sand, mud .....	.....	.....	.....	T.
656	5	do	8	Mud	71	68.5	66	D.
657	5	do .....	.....	.... do	71	.....	.....	D.
658	10	About $\frac{3}{4}$ mile off Gay Head	9	Gravel	66	64	64	D.
659	10	do	9	Hard	73	66	64	D.
660	10	do	9	.... do	73	66	64	D.
661	10	About $1\frac{1}{2}$ miles off Gay Head	13	Shells	67	65	65	D.
662	10	Vineyard Sound	10	Sand .....	.....	.....	.....	T.
663	10	Vineyard Sound, off Tarpaulin Cove.	$14\frac{1}{2}$	Hard	68	66	66	D.
664	10	do	16	.....	67.5	66.5	66.5	D.
665	10	do	$13\frac{1}{2}$	Hard	67.5	67.5	67.5	D.

STATIONS FOR 1875—Continued.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
666	1875. Aug. 11	Off Chappaquiddick, SE. part of Martha's Vineyard.	3	Sand	o	o	o	T.
667	11	do	5	Sand, stones	72	71.5	71	D.
668	11	do	6	Sand, gravel	72	.....	.....	D.
669	11	Off Skiff Island, at SE. corner of Martha's Vineyard.	7	Mud, shells	72	.....	.....	D.
670	11	do	29	Sand	74	68	66	D.
671	12	Great Point, Nantucket Island W. 5 miles.	7½	do	72	56	56	D.
672	12	do	8	do	72	56	56	D.
673	12	do	9	do	72	.....	.....	T.
674	12	Sankaty Head, Nantucket Isl- and, W. 1 mile.	6½	Sand, gravel	72	67	66	D.
675	12	Sankaty Head, Nantucket Isl- and, WNW. 2 miles.	16	Hard	72	66	65	D.
676	12	A little west of 675	9	do	76	.....	.....	D.
677	12	Sankaty Head, Nantucket, NW. 1 mile.	7½	do	77	.....	.....	T.
678	12	Sankaty Head, Nantucket, W. ¾ mile.	4½	Sand, shells	78	.....	.....	T.
679	13	Nantucket Sound, off west side Nantucket Island.	5½	do	80	76	70	D.
680	13	do	7	Mud	80	.....	70.5	D.
681	13	do	5	Sand	80	71.5	71	D.
682	13	Nantucket Sound, Cross-Rip Light-Ship NW. 2½ miles.	10	Shells, sand	79	.....	.....	D.
683	13	Nantucket Sound, Cross-Rip Light-Ship E. about 3 miles.	10½	Sand	79	71	70.5	D.
684	13	Nantucket Sound, Cross-Rip Light-Ship E., Cape Poge Light SSW. 2½ miles.	10½	do	71	71	71	D.
685	13	Vineyard Sound, off Falmouth.	5	do	78	.....	.....	T.
686	17	Buzzard's Bay, off Nye's Neck.	7½	Mud, hard	76	.....	.....	T.
687	17	do	6	Sandy mud .....	.....	.....	.....	T.
688	17	do	5	do .....	.....	.....	.....	D.
689	17	do	7	Sand .....	.....	.....	.....	D.
690	17	do	8	Sand, mud .....	.....	.....	.....	D.
691	17	Buzzard's Bay, off Wild Harbor, near N. Falmouth.	8	Sand, gravel	75	.....	.....	D.
692	17	Buzzard's Bay, off West Fal- mouth ¾ mile.	7½	Shells, gravel	75	.....	72	D.
693	17	Buzzard's Bay, SW. of No. 692 about ½ mile.	7	Mud	75	76	73	D.
694	17	Buzzard's Bay, off Hamlin Point.	3½	Hard	75	.....	.....	D.
695	17	do	5	do	75	75.5	70.5	D.
696	17	Buzzard's Bay, off Quamquissett Harbor.	7	Sand, mud	75	78.5	70.5	D.
697	23	Vineyard Sound, S. entrance to Quick's Hole.	7½	Stony, mussels .....	.....	67	67	D.
698	23	do	6	Sand, rocks	64	68.5	68.5	D.
699	23	Vineyard Sound, off Quick's Hole	7½	do	64	.....	.....	D.
700	23	Vineyard Sound, south of Cutty- hunk Light 1 mile.	9½	Sand .....	.....	66	65.5	D.
701	23	Vineyard Sound, off Cuttyhunk Light 1 mile.	9	Rocky	64	.....	.....	D.
702	23	Near mouth of Buzzard's Bay, Cuttyhunk Light ESE. 1 mile.	8½	Gravel .....	.....	66	65	D.
703	23	Vineyard Sound, off south side of Cuttyhunk Island.	9	.....	.....	.....	.....	T.
704	23	do	9	.....	.....	.....	.....	T.
705	23	Vineyard Sound, off Robinson's Hole.	15	Sand, gravel	66	68.5	66	D.
706	25	Vineyard Sound, off Falmouth.	4	.....	69	.....	.....	T.
707	25	do	4	.....	.....	.....	.....	T.
708	25	do	6	Sand	68.5	73	72	D.
709	25	do	5	.....	.....	.....	.....	D.
710	31	Vineyard Sound	9	Hard	76	69	69	D.
711	31	do	10	do	76	68.5	69	D.
712	31	do	13	do	76	69	69	D.
713	31	do	8	Shells, gravel	76	70	69.5	D.
714	31	do	6	.....	76	70	69.5	D.
715	31	do	13	Hard, gravel	75	70	70	D.
716	Sept. 1	Off Gay Head, 3 miles SW. buoy No. 25.	17	Mud .....	.....	66	61.5	D.
717	1	Southwest of Gay Head, distant 4 miles.	19	do .....	.....	66	60	D.

STATIONS FOR 1875—Continued.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom:	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
718	Sept. 1875.	Southwest of Gay Head, distant 6½ miles.	19	Mud, sand	°	°	65.5 60 °	D.
719	1	Southwest of Gay Head, distant 8 miles.	19	Hard, sand	60	58.5		D.
720	1	Southwest of Gay Head, distant 8½ miles.	19	Sand				T.
721	1	Southwest of Gay Head, distant 10 miles.	12	Hard				D.
722	1	Southwest of Gay Head, distant 11 miles.	14	do				D.
723	1	Off NW. end of Devil's Bridge Reef, Gay Head.	9	Rocky				D.
724	1	do	9	do				D.
725	3	South of Cape Poge, Martha's Vineyard, in north part of Muskeget Channel.	4-1½	Sand				T.
726	3	About the same as 725	5	Sand, eelgrass				D.
727	3	do	4	do				D.
728	3	do	1-4	do				D.
729	3	About 3½ miles SE. of Cape Poge.	7½	Hard				T.
730	3	About 4 miles SSE. of Cape Poge.	9	Sand, gravel				B.
731	3	About ¾ mile S. of No. 730	9	do				D.
732		(No record.)						
733	6	Off Martha's Vineyard	6	Hard			62	D.
734		(No record.)						
735	6	Off Martha's Vineyard, 1½ miles SE. of Squipnocket Point.	11	Sand			60	D.
736		(No record.)						
737		do						
738	7	Off Nantucket, ½ mile S. of Tuckernuck Island.	3½	Sand			65	D.
739	7	Off Nantucket, off S. side of Tuckernuck Island.	8	Coarse sand			65	D.
740	7	do	8½	Sand				T.
741	7	do	11	do				D.
742		(No record.)						
743	8	2 miles S. of Great Round Shoal buoy, 6½ miles a little N.E. of Great Point, Nantucket.	15½	Fine sand	65	60	58.5	D.
744	8	3 miles SE. of Great Round Shoal buoy, 9 miles from Great Point.	18	Sand, shells	65		58.5	D.
745	8	4 miles SSE. of Great Round Shoal buoy, 9 miles from Great Point.	15½	Sand			59	D.
746	8	Off Nantucket, N. of McBlair's Shoal.	13					T.
747	8	do	13½					T.
748	8	do	13½					T.
749	8	do	13½					D.
750	15	8 miles east of Great Point, Nantucket.	15	Sand				D.
751	15	9 miles east of Great Point, Nantucket.	13	do				
752	15	8 miles east of Great Point, Nantucket.	20	do				
753	15	9 miles east of Great Point, Nantucket.	10	do				
754	15	11 miles east of Great Point, Nantucket.	10	do				
755	15	12 miles east of Great Point, Nantucket.	10	do				
756	15	15 miles east of Great Point, Nantucket.	9	do				
757	15	15 miles east of Great Point, Nantucket.	9	do				
758	15	16½ miles east of Great Point, Nantucket.	6	do				
759	15	7½ miles east of Great Point, Nantucket.	9	do				
760	15	7 miles east of Great Point, Nantucket.	15	do				
761	15	7½ miles east of Great Point, Nantucket.	10	do				
762	20	Off Southwest Ledge, Gay Head NE. 11½ miles.	16½	Gravel	64		60	D.

STATIONS FOR 1875—Concluded.

Serial number.	Date.	Locality.	Depth in fath. oms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
763	Sept. 20 1875.	Off Southwest Ledge, $\frac{1}{2}$ mile W. of 762.	17	Gravel, sand	64 °	°	°	D.
764	20	Off Southwest Ledge, $\frac{1}{2}$ mile S. of 762.	.....	.....	.....	.....	.....
765	20	Off Southwest Ledge, $\frac{1}{2}$ mile W. of 763.	17	Sand, gravel .....	.....	.....	60	D.
766	20	On Southwest Ledge, $\frac{1}{4}$ mile NW. W. of No. 765.	17	....do .....	.....	.....	60	D.
767	20	Off Southwest Ledge, $1\frac{1}{4}$ miles W. of No. 762.	18	Sand.....	64	.....	61	D.
768	20	9 miles SW. of Gay Head	20	....do	64	.....	61	D.
769	20	6 miles SW. $\frac{1}{2}$ W. of Gay Head..	20	....do .....	.....	.....	.....	D.

STATIONS FOR 1877, 1878, AND 1879, WITH HEADQUARTERS AT SALEM, MASS., HALIFAX, N. S., GLOUCESTER AND PROVINCETOWN, MASS.

During these three years the dredgings were carried on from the U. S. Str. Speedwell, commanded in 1877 by Lieut. Commander A. G. Kellogg, in 1878 by Lieut. Commander L. A. Beardslee, and in 1879 by Lieut. Z. L. Tanner. In 1877, headquarters were first established at Salem, and the stations made from there covered the northern part of Massachusetts Bay, and portions of the Gulf of Maine, off Cape Ann. During the session of the commission of arbitration on the fishery claims, however, the headquarters were removed to Halifax, N. S., and dredgings were made in the waters off that coast, from the last of August to the first of October. The Speedwell also made a line of stations on her trip across the Gulf of Maine, from Cape Ann to Cape Sable, N. S. In 1878, with headquarters at Gloucester, Mass., the area dredged over included the northern and central parts of Massachusetts Bay, and the Gulf of Maine, off Cape Ann. In 1879, the dredging grounds were the southern part of Massachusetts Bay, and the Gulf of Maine, off Cape Cod. The bottom temperatures in 1877 were mostly taken with Miller-Casella self-registering, deep-sea thermometers, but in 1878 and 1879 Negretti-Zambra thermometers were used for that purpose. All the temperatures for 1879 were taken with more than usual care, the thermometers employed being frequently compared with a reliable standard.

DREDGINGS BY SPEEDWELL, 1877.

Detail number.	Date.	Latitude.	Longitude.	Locality.	Nature of bottom.	Temperatures.		
						Depth in fath.	Bottom.	Air.
1	1877. 1 Aug. 4	° 42' 30"	' 70 45'	A little S. of E. from Salem, 4 miles SSE. of Baker's Island. Same as No. 1	22 Gravelly..... 22 do	° 71	° 63 ° 63?	° 46 D.
2	do			N.W. of No. 1	22 do	72?	60 62?	T.
3, 4	do			Baker's Island N.W. by N. $\frac{5}{4}$ miles, Eastern Point (south of Gloucester) NNE. $\frac{6}{4}$ miles	33 Sand and mud	72	45? 45?	D.
5	5 Aug. 5	42 28	70 42	SW. of No. 5	do	do	do	T.
6	do			Halfway Rock N.W. by W., Baker's Island NW. by N. $\frac{1}{2}$ N. (true), close to No. 1.	20 Rocky	70	65 $\frac{1}{2}$	D.
7	7 Aug. 6			S. of No. 8	25 Gravelly	69	63 $\frac{1}{2}$	Tan.
8	8 Aug. 6			Same as No. 8	26 do	69 $\frac{1}{2}$	64 $\frac{1}{2}$	D. and Tan.
9	9 do			Thatcher's Island Lights NE. by E. $\frac{1}{2}$ E. 12 $\frac{1}{4}$ miles, Baker's Island Light N.W. $\frac{1}{2}$ N. 10 miles.	45 Mud	70	64 $\frac{1}{2}$	D.
10	10 do			Same as No. 11	50	do	do	D.
11	11 do			1 mile E. of No. 12	50	do	do	T.
12	12 do			Baker's Island N.N.W. $\frac{1}{2}$ W. 3 miles, Halfway Rock NW. by W. $\frac{1}{4}$ miles, near Nos. 1 to 4, and 8 to 10.	50 Gravelly	69	66	D.
13	13 do			Same as No. 15	50	do	do	Tan.
14	14 do			Halfway Rock NW. by W. 3 miles, Baker's Island Light N.W. by N. 4 $\frac{1}{2}$ miles; between No. 5 and No. 1.	50	do	do	T.
15	15 Aug. 7			Halfway Rock W. by N. $\frac{1}{2}$ miles, Eastern Point Light N.W. by N. $\frac{1}{2}$ miles.	45 Mud	45	54 $\frac{1}{2}$	D.
16	16 do			About same place	45 do	do	do	T.
17	17 Aug. 8			Halfway Rock W. by N. $\frac{1}{2}$ miles, Eastern Point Light N.W. by N. $\frac{1}{2}$ miles.	45 Hard gravel and stones	45	do	D.
18	18 do			Halfway Rock W. by N. $\frac{1}{2}$ miles, Eastern Point Light N.W. by N. $\frac{1}{2}$ miles.	35 Mud and clay nodules	35	do	T.
19	19 do			Halfway Rock W. by N. $\frac{1}{2}$ miles, Eastern Point Light N.W. by N. $\frac{1}{2}$ miles.	33 Soft mud	33	67 $\frac{1}{2}$	D.
20	20 do			Halfway Rock W. by N. $\frac{1}{2}$ miles, Eastern Point Light N.W. by N. $\frac{1}{2}$ miles.	48 do	48	67 $\frac{1}{2}$	D.
21, 22	21, 22 Aug. 10			Halfway Rock W. by N. $\frac{1}{2}$ miles, Eastern Point Light N.W. by N. $\frac{1}{2}$ miles.	48 do	48	67 $\frac{1}{2}$	T.
23	23 do			Halfway Rock W. by N. $\frac{1}{2}$ miles, Eastern Point Light N.W. by N. $\frac{1}{2}$ miles.	48 do	48	67 $\frac{1}{2}$	D.
24	24 Aug. 13	42 30	70 41	Halfway Rock W. by N. $\frac{1}{2}$ miles, Eastern Point Light N.W. by N. $\frac{1}{2}$ miles.	48 do	48	67 $\frac{1}{2}$	T.
25	25 do	42 27 $\frac{1}{2}$	70 36	Halfway Rock W. by N. $\frac{1}{2}$ miles, Eastern Point Light N.W. by N. $\frac{1}{2}$ miles.	48 do	48	67 $\frac{1}{2}$	D.
26-30	26-30 do			Same as No. 25	48 do	48	67 $\frac{1}{2}$	T.
31	31 do			do	48 do	48	67 $\frac{1}{2}$	D.
32	32 Aug. 14	42 30	70 26	Thatcher's Island Light NW. $\frac{1}{2}$ N. 13 $\frac{1}{4}$ miles, Halfway Rock W. by N. 20 miles.	48 do	48	67 $\frac{1}{2}$	T.
					48 do	48	67 $\frac{1}{2}$	D.
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					48 do	48	67 $\frac{1}{2}$	T.
					48 do</			

DREDGING STATIONS OF U. S. FISH COMMISSION.

27

33	do	42	37	69	39	Gulf of Maine, Cape Ann W. by N. 42 miles.....	160	Soft mud.....	72	70	$\frac{37}{3}$	Tan.
34	Aug. 19	42	37	66	58	Nearly the same as No. 34.....	115	Gravelly.....	68 $\frac{1}{2}$	59	$\frac{38}{3}$	D.
35, 36	do	42	39	66	58	Gulf of Maine, 155 miles E. of Cape Ann.....	112	do.....	66	55	$\frac{38}{3}$	T.
+	+	37	Aug. 20	42	42	About 2 miles N. of No. 39.....	75	Sand and mud.....	66	55	$\frac{38}{3}$	D.
+	+	38	do	42	44	W. of Brown's Bank.....	82	Fine sandy mud. Rocks and barnacles.....	54 $\frac{1}{2}$	54 $\frac{1}{2}$	$\frac{39}{3}$	D.
+	+	39	do	42	44	do.....	88	Very fine sand.....	68	62 $\frac{1}{2}$	$\frac{33}{3}$	T.
+	+	40	do	42	46	do.....	*90	Fine sandy mud.....	63 $\frac{1}{2}$	62 $\frac{1}{2}$	$\frac{41}{3}$	D.
+	+	41	do	42	49	66 19	91	do.....	63 $\frac{1}{2}$	62 $\frac{1}{2}$	$\frac{33}{3}$	T.
+	+	42	Aug. 21	43	04 $\frac{1}{2}$	SE. $\frac{1}{2}$ S. from Cape Sable about 32 miles.....	*90	do.....	63 $\frac{1}{2}$	62 $\frac{1}{2}$	$\frac{33}{3}$	T.
+	+	43	do	43	05 $\frac{1}{2}$	SE. $\frac{1}{2}$ S. from Cape Sable about 31 miles.....	59	Pebbles and sand.....	59	59	$\frac{37}{3}$	D.
+	+	44	do	43	06	SE. $\frac{1}{2}$ S. from Cape Sable about 30 miles.....	59	Rocky.....	59	59	$\frac{37}{3}$	T.
+	+	45	do	43	06	SE. $\frac{1}{2}$ S. from Cape Sable about 28 miles.....	56	Hard.....	68	64 $\frac{1}{2}$	$\frac{31}{3}$	Tan.
+	+	46	do	43	07 $\frac{1}{2}$	SE. $\frac{1}{2}$ S. from Cape Sable about 27 miles.....	*90	Large stones.....	63 $\frac{1}{2}$	62 $\frac{1}{2}$	$\frac{40}{3}$	D.
+	+	47	do	43	10	SE. by S. from Cape Sable about 22 miles.....	47	Stony.....	68	64 $\frac{1}{2}$	$\frac{36}{3}$	T.
+	+	48	do	43	11	SE. $\frac{1}{2}$ S. from Cape Sable about 20 miles.....	35	Mud.....	72	68 $\frac{1}{2}$	$\frac{37}{3}$	D.
+	+	49	do	43	13	SE. $\frac{1}{2}$ S. from Cape Sable about 18 miles.....	35	do.....	72	68 $\frac{1}{2}$	$\frac{34}{3}$	T.
+	+	50, 51	do	43	14	65 17 $\frac{1}{2}$ Off Cape Negro, Nova Scotia, SE. $\frac{1}{2}$ S. from Cape Sable 17 miles.....	35	do.....	72	68 $\frac{1}{2}$	$\frac{34}{3}$	T.
+	+	52	do	43	26 $\frac{1}{2}$	65 14 Off Shelburne, Nova Scotia, 19 miles south.....	16	Sand.....	72	66 $\frac{1}{2}$	$\frac{46}{3}$	D. and T.
+	+	53	Aug. 25	do	do	In Bedford Basin, north of Halifax.....	33	do.....	72	66 $\frac{1}{2}$	$\frac{46}{3}$	D. and T.
+	+	54	do	do	do	Mouth of Bedford Basin.....	33	do.....	68 $\frac{1}{2}$	63 $\frac{1}{2}$	$\frac{43}{3}$	D.
+	+	55	do	do	do	{ Halifax Harbor, off Herring Cove, between Mars Rock and Neverfail Shoal.	25	Gravel.....	68 $\frac{1}{2}$	63 $\frac{1}{2}$	$\frac{43}{3}$	D.
+	+	56-58	do	do	do	{ Halifax Outer Harbor, $\frac{1}{4}$ mile SSW. Rock Head buoy.....	20	Shingly.....	67 $\frac{1}{2}$	67	$\frac{47}{3}$	D. and T.
+	+	59	Aug. 28	do	do	{ Halifax Outer Harbor, $\frac{1}{4}$ mile N. Rock Head buoy.....	26	do.....	67 $\frac{1}{2}$	67	$\frac{48}{3}$	D. and T.
+	+	60	do	do	do	{ Halifax Harbor, between Mars Rock and York Redoubt buoy, $\frac{1}{2}$ mile distant.	40	Mud.....	66 $\frac{1}{2}$	63 $\frac{1}{2}$	$\frac{35}{3}$	D.
+	+	61, 62	do	do	do	Bedford Basin, $\frac{1}{2}$ across harbor from Navy Island.....	40	do.....	68 $\frac{1}{2}$	68	$\frac{33}{3}$	R. D.
+	+	63	Aug. 29	do	do	Narrow at mouth of Bedford Basin, drifting in.....	41	do.....	68 $\frac{1}{2}$	68	$\frac{34}{3}$	T.
+	+	64	do	do	do	Without bottom.....	16	do.....	69	68	$\frac{44}{3}$	D.
+	+	65	do	do	do	180 Gravel and pebbles.....	620	do.....	65 $\frac{1}{2}$	63 $\frac{1}{2}$	$\frac{36}{3}$	T.
+	+	66	do	do	do	190 do.....	190	do.....	66 $\frac{1}{2}$	63 $\frac{1}{2}$	$\frac{38}{3}$	D.
+	+	67	do	do	do	181 do.....	95	do.....	66 $\frac{1}{2}$	63 $\frac{1}{2}$	$\frac{39}{3}$	D.
+	+	68	do	do	do	182 do.....	18	Fine sand.....	66 $\frac{1}{2}$	63 $\frac{1}{2}$	$\frac{41}{3}$	D.
+	+	69	Sept. 1	42	44	62 43 About 120 miles S. of Halifax.....	18	do.....	66 $\frac{1}{2}$	63 $\frac{1}{2}$	$\frac{39}{3}$	D.
+	+	70	do	42	45 $\frac{1}{2}$	62 43 About 118 miles S. of Halifax.....	18	do.....	66 $\frac{1}{2}$	63 $\frac{1}{2}$	$\frac{41}{3}$	D.
+	+	71	do	42	46	62 44 Sanwich Point (Halifax Harbor) W. $\frac{1}{2}$ N. $\frac{1}{2}$ miles.....	18	do.....	66 $\frac{1}{2}$	63 $\frac{1}{2}$	$\frac{41}{3}$	D.
+	+	72	Sept. 4	do	do	* Estimated.	18	do.....	66 $\frac{1}{2}$	63 $\frac{1}{2}$	$\frac{41}{3}$	D.

† Inside pilot-house.

* Estimated.

DREDGINGS BY SPEEDWELL, 1877—Continued.

Serial number.	Date.	Latitude.	Longitude.	Locality.	Nature of bottom.	Temperatures.		
						Depth, in fath. oms.	Air.	Surficee.
73, 74	1877. Sept. 4	o o	/	Sandwich Point (Halifax Harbor) W. $\frac{1}{4}$ N. $\frac{1}{2}$ mile	Fine sand and rocks Fine sand	18	o o	o o
75 76	do do			Halifax Harbor, half way between Litchfield and Mars Rocks. $\frac{1}{2}$ mile to the eastward of No. 76 Chebucto Head (entrance of Halifax Harbor) SW. by S. $\frac{1}{4}$ S. (SW. $\frac{3}{4}$ S. $\frac{1}{4}$, $\frac{3}{4}$ $\frac{1}{2}$ miles, farther S. and E. than No. 78		16	T. D. D.	T. D. D.
77	do					23	Rocky	D.
78	Sept. 5					25	Rocky and nullipore	D.
79	do					67	Fine sand.	D.
80	do	44	22	63		57	Muddy and pebbles	D.
81	do			28	Chebucto Light N. $\frac{1}{2}$ E. 9 miles.	57	Stony, with sponges and red algae.	T.
82	do			do		57	Mud and sand.	Tan.
83	do			do		57	Coarse gravel and stones, bryozoans.	D.
84	Sept. 6	44	04	63	Chebucto Head N. by E. $\frac{1}{4}$ E. 26 miles.	101	Fine sand.	D.
85	do			do		65	63	T. D.
86	do			do		72	Very fine sand, stones, and algae.	T. D.
87	Sept. 11			Mouth Halifax Harbor, Litchfield Rock NE. by E. E. $\frac{1}{4}$ N. 8 miles. Automatic Buoy S. $\frac{1}{4}$ S. $\frac{1}{2}$ miles, dragging E. to $\frac{1}{2}$ or 8 fathoms on Neverfail Shoal.	21	Kelp, red algae, and fine sand.	61 $\frac{1}{2}$	T. D.
88	do			Sandwich Point S. $\frac{1}{4}$ mile, drifting S. with tide parallel to shore until Sandwich Point was W. by N.	17	Mud and eelgrass.	62	T.
89	do			Same as last.	21	Mud and eelgrass.	74	D.
90	do			Head of Northwest Arm, Halifax Harbor.	63	70	62	D.
91	do			Same as last.	7		58	D.
92	do			Halifax Harbor, Mouth of Northwest Arm, battery N. by E. $\frac{1}{4}$ E., quarry opposite.				T.
93	Sept. 13			Halifax Harbor, $\frac{1}{4}$ mile from shore off York Redoubt and Sandwich Point.	16	Sand and red algae.		T.
94	do			Little farther E. and S. than last.				D.
95	do			Same as last.		Very fine sand, ooze and red algae.		T.
96	do			do				D.
97	do			Midway between York Redoubt and McNab's Island Light, Halifax Harbor.				T.

DREDGING STATIONS OF U. S. FISH COMMISSION.

29

+ 98	Sept. 15	do	do	Mud and fine sand	18	Mud and fine sand	61	61	46
+ 99	do	do	do	do	do	do	do	do	46 $\frac{1}{2}$
+ 100	do	do	44 28	63 18	Shingle	42	61 $\frac{1}{2}$	34	T.
+ 101	do	do	do	do	Sand, bro. Light, W. by N. $\frac{3}{4}$ miles.	42	61 $\frac{1}{2}$	34 $\frac{1}{2}$	T.
+ 102	do	do	do	do	Off Halifax, Sambro Light W. by N. $\frac{1}{4}$ N. 9 miles.	42	61 $\frac{1}{2}$	34 $\frac{1}{2}$	T.
+ 103	Sept. 20	44 02	63 20	do	do	do	do	do	T.
+ 104	do	do	44 01	63 20	Sambro Light N. $\frac{1}{4}$ W. 26 miles, Egg Island NE. 41 miles, 29 miles S. of Chebucto Head.	92	63	35 $\frac{1}{2}$	D.
+ 105	do	do	do	do	29 $\frac{1}{4}$ miles S. from Chebucto Head	110	63	35 $\frac{1}{2}$	D.
+ 106-108	Near last.	do	do	do	do	do	do	do	T.
+ 109	Sept. 21	do	do	do	do	do	do	do	D. and T.
+ 110	111	do	do	do	do	do	do	do	T.
+ 111	do	do	do	do	do	do	do	do	T.
+ 112	do	do	do	do	do	do	do	do	T.
+ 113	do	do	do	do	do	do	do	do	T.
+ 114-117	do	do	do	do	do	do	do	do	T.
+ 118	do	do	do	do	Chebucto Head Light NW. by W. about 9 miles	52	60	35	D.
+ 119	Sept. 27	do	do	do	Chebucto Head Light NW. by W. about 9 miles	52	60	35	T.
+ 120	do	do	do	do	Halifax Harbor, off York Ileabout	53	60	35	T.
+ 121	do	do	do	do	Halifax Outer Harbor	16	60	35	T.
+ 122	do	do	do	do	do	do	do	do	T.
+ 123	do	do	do	do	do	do	do	do	T.
+ 124	Oct. 17	42 32	70 22 $\frac{1}{2}$	do	Off Sandwich Point, Halifax Harbor	50	52	45	T.
+ 125	do	do	do	do	W. $\frac{1}{4}$ N. 19 $\frac{1}{2}$ miles.	50	52	45	D.
+ 126	do	do	do	do	Thatcher's Island Light NW. $\frac{1}{4}$ N. 11 $\frac{1}{2}$ miles.	51	52	45	D.
+ 127	do	do	do	do	Cape Ann NW. $\frac{1}{4}$ N. 12 to 14 miles.	75	52	45	D.
+ 128	do	do	do	do	do	75	52	45	D.
+ 129	July 23	42 24	70 33 $\frac{1}{2}$	do	do	do	do	do	D.
+ 130	do	do	do	do	do	do	do	do	T.
+ 131	do	do	do	do	do	do	do	do	T.
+ 132	do	do	do	do	do	do	do	do	T.
+ 132 $\frac{1}{2}$	do	do	42 28 $\frac{1}{2}$	70 36	do	do	do	do	T.
+ 133	do	do	42 32	70 38 $\frac{1}{2}$	do	do	do	do	T.

DREDGINGS BY SPEEDWELL, 1878.

129	1878.	49	do	do	do	do	do	do	do
130	do	do	do	do	do	do	do	do	do
131	do	do	do	do	do	do	do	do	do
132	do	do	do	do	do	do	do	do	do
132 $\frac{1}{2}$	do	do	do	do	do	do	do	do	do
133	do	do	do	do	do	do	do	do	do

Thatcher's Island Light N. $\frac{1}{4}$ E. 13 $\frac{1}{2}$ miles, Eastern Point N. by W. $\frac{1}{4}$ W. 11 $\frac{1}{2}$ miles,
About $\frac{1}{2}$ mile N. $\frac{1}{4}$ W. of No. 129
Thatcher's Island Light N. by E. $\frac{1}{4}$ E. 15 miles, 1 mile W. of
No. 129.
Thatcher's Island Light N. $\frac{1}{4}$ E. 11 $\frac{1}{2}$ miles, Eastern Point N.
by W. $\frac{1}{4}$ W. 10 miles, 3 miles N. $\frac{1}{4}$ W. of No. 129.
Thatcher's Island N. $\frac{1}{4}$ E. 10 miles, Eastern Point N. by W. $\frac{1}{4}$
W. 6 miles, Baker's Island W. $\frac{1}{4}$ S. 9 miles.
Thatcher's Island N. $\frac{1}{4}$ N. 7 $\frac{1}{2}$ miles, Eastern Point N. $\frac{1}{4}$ W.
 $\frac{1}{2}$ miles, Baker's Island W. by N. $\frac{1}{4}$ N. 6 $\frac{1}{2}$ miles.

DREDGINGS BY SPEEDWELL, 1878—Continued

Serial number	Date.	Latitude.	Longitude.	Locality.	Nature of bottom.		Temperatures.		Depth in fath. oms.	Apparatus used.
					Air.	Surface.	Bottom.	Air.		
134	July 23	° 0'	° 0'	Thatcher's Island N.E. $\frac{1}{4}$ N. 63 miles, Eastern Point N. $\frac{1}{4}$ E. 24 miles, Baker's Island N.W. $\frac{3}{4}$ N. 52 miles, mile NW. of No. 133 Island N.E. $\frac{1}{4}$ N. 52 miles, W. 2 miles, West Light Thatcher's Island N.E. $\frac{1}{4}$ N. 52 miles, 2 miles N. of No. 133.	26	Pebbles and coarse sand . . .	° 0'	° 0'	61	D.
135	July 26	42° 33' 38'	70° 20' 38'	Thatcher's Island N.E. $\frac{1}{4}$ N. 15 (southwesterly on original chart) Short distance E. of No. 135 (southwesterly on original chart) Eastern Point WNW. $\frac{1}{4}$ W. 16 $\frac{1}{2}$ miles, Thatcher's Island NW. $\frac{1}{4}$ W. 13 $\frac{1}{2}$ miles.	25	Stony and gravelly . . .	70	58 $\frac{1}{2}$	40 $\frac{1}{2}$	D. and T.
135 ^a	do	do	do	Thatcher's Island N.W. 1 N. 9 miles, Baker's Island W. by N. 10 $\frac{1}{2}$ miles.	26	Sand and stones . . .	72	40	38 $\frac{1}{2}$	D.
136	July 29	42° 32' 23'	70° 20' 23'	Drifting SW. from No. 138. Eastern Point W. by N. 4 N. 6 miles, Thatcher's Island N. by W. $\frac{1}{4}$ W. 4 $\frac{1}{2}$ miles.	26	Rocky, drifting into soft mud . . .	70	65	38 $\frac{1}{2}$	T.
137	do	do	do	Gloucester Harbor, Eastern Point Light ESE. Norman's Woe Rock SW. by S., Fresh Water Cove NW. by W. $\frac{1}{2}$ W. About as last.	59	Muddy . . .	59	40	40	D.
138	do	42° 33'	70° 20' 26	do	38	do . . .	67	59 $\frac{1}{2}$	44 $\frac{1}{2}$	D.
139	do	42° 34'	70° 32'	do	8 $\frac{1}{2}$	Sandy . . .	63	57 $\frac{1}{2}$	44 $\frac{1}{2}$	D.
140	do	do	do	do	9	Sandy . . .	63	56 $\frac{1}{2}$	50	T.
+ +	Aug. 1	do	do	Glooucester Harbor, between Round Rock and Ten Pound Island Ledge.	8	Sandy . . .	63 $\frac{1}{2}$	56 $\frac{1}{2}$	51	T.
+ +	do	do	do	About same as No. 145. Eastern Point Light NE. by E. $\frac{1}{2}$ N. 24 miles, Baker's Island W. 4 $\frac{1}{2}$ miles.	16	Gravel, stones, broken shells.	67 $\frac{1}{2}$	56 $\frac{1}{2}$	42 $\frac{1}{2}$	D.
+ +	do	do	do	do	16	Stony . . .	66	61 $\frac{1}{2}$	42	D.
+ +	do	do	do	do	19 $\frac{1}{2}$	Sand and gravel . . .	66	61 $\frac{1}{2}$	51 $\frac{1}{2}$	T.
+ +	do	do	do	do	7 $\frac{1}{2}$	Sand and mud . . .	70	61	51 $\frac{1}{2}$	T.
+ +	Aug. 1	42° 33' 41'	70° 20' 41'	do	7-10	do . . .	7-10	do . . .	do . . .	T.
147	Aug. 3	42° 33'	70° 20' 41'	do	do	do . . .	do . . .	do . . .	do . . .	D.
148	do	do	do	do	do	do . . .	do . . .	do . . .	do . . .	D.
149	do	do	do	do	do	do . . .	do . . .	do . . .	do . . .	D.
+ +	do	do	do	do	do	do . . .	do . . .	do . . .	do . . .	D.
+ +	do	do	do	do	do	do . . .	do . . .	do . . .	do . . .	D.
151	do	do	do	do	do	do . . .	do . . .	do . . .	do . . .	D.
152	do	do	do	do	do	do . . .	do . . .	do . . .	do . . .	D.
153	do	do	do	do	do	do . . .	do . . .	do . . .	do . . .	D.
153 ^a	Aug. 8	42° 35'	70° 31'	Eastern Point Light, SW. 2 miles, (on schr. Haitie) Thatcher's Island N.W. $\frac{3}{4}$ N. 4 $\frac{1}{2}$ miles, Eastern Point W. $\frac{1}{2}$ N. 7 miles.	17	Pebbles, coarse sand . . .	69 $\frac{1}{2}$	62	44 $\frac{1}{2}$	D.
154	Aug. 15	42° 35'	70° 30'	do	38	Muddy . . .	64 $\frac{1}{2}$	64 $\frac{1}{2}$	41 $\frac{1}{2}$	D.
155	do	42° 35'	70° 30'	do	45	Sand and mud . . .	70 $\frac{1}{2}$	68 $\frac{1}{2}$	41 $\frac{1}{2}$	T.
156	do	do	do	do	42	Sand and rocks . . .	73	73	42 $\frac{1}{2}$	D.
157	do	do	do	do	40	Mud and then rocks . . .	38	38	42 $\frac{1}{2}$	D.
158	do	do	do	do	do	do . . .	do . . .	do . . .	do . . .	D.

159	do	70	27	Gloucester Harbor, just off Fresh Water Cove	8	Sand	44 $\frac{1}{2}$	T.
160	Aug. 16	42	66	Eastern Point Light W. $\frac{1}{4}$ N. 0 miles, Thatcher's Island	54	do	49 $\frac{1}{2}$	D.
161	do	42	66	Light, NW. $\frac{3}{4}$ W. 63 miles.	54	do	71 $\frac{1}{2}$	T.
162	do	42	66	A little S. by W. of No. 160.	64	do	39 $\frac{1}{2}$	T.
163	do	42	66	About a mile S. of No. 160.	64	Mud	71 $\frac{1}{2}$	T.
164	do	42	66	West Lick*, on Thatcher's Island NW. $\frac{1}{4}$ W. 61 miles, Eastern Point Light W. $\frac{3}{4}$ N. 10 miles, a mile SE. $\frac{1}{4}$ E. from No. 160.	73	Fine sand	70 $\frac{1}{2}$	T.
165	Aug. 19	42	44 $\frac{1}{2}$	West Light, Thatcher's Island, WNW. $\frac{7}{8}$ N. 7 $\frac{1}{2}$ miles, Eastern Point Light W. $\frac{5}{8}$ N. 10 $\frac{1}{2}$ miles, nearly 2 miles E. of No. 160.	75	do	do	40 T.
166	do	42	44 $\frac{1}{2}$	Ipswich Bay, Straitsmouth Light, S. by E. 5 miles, Amisquam Light SW. $\frac{3}{4}$ W. 5 $\frac{1}{2}$ miles.	35	do	71	64 $\frac{1}{2}$
167	do	42	44 $\frac{1}{2}$	About same as last.	71	do	71 $\frac{1}{2}$	T.
168	do	42	44 $\frac{1}{2}$	About same as last, $\frac{1}{2}$ mile N.	71	Sand	71	T.
169	do	42	33	Straitsmouth Light SE. by S. 4 $\frac{1}{2}$ miles, Amisquam Light SSW. $\frac{3}{8}$ W. 3 $\frac{1}{2}$ miles, 2 miles WSW. of No. 165.	19	do	do	40 $\frac{1}{2}$ T.
170	Aug. 24	42	33	About $\frac{1}{2}$ mile W. of No. 168.	90	Fine sandy mud with some gravel.	40	D.
171	do	42	33	Eastern Point Light W. by N. $\frac{1}{4}$ N. 30 $\frac{1}{2}$ miles, Boone Island Light N. by W. 4 $\frac{1}{2}$ miles.	90	Similar, but more stony.	67	39 T.
172	do	42	33	A Little S. of last.	115	Sandy mud and fine gravel	65 $\frac{1}{2}$	T.
173	do	42	37	Eastern Point Light W. by N. $\frac{1}{4}$ N. 32 $\frac{1}{4}$ miles, Boone Island Light, NNW. $\frac{3}{4}$ N. 42 $\frac{1}{2}$ miles.	140	do	68 $\frac{1}{2}$	D.
174	Aug. 27	42	37	"Drifting towards the N."	140	Muddy	65 $\frac{1}{2}$	39 T.
175	do	42	38 $\frac{1}{2}$	Thatcher's Island Light, W. $\frac{1}{4}$ N. 38 miles, Eastern Point Light W. $\frac{3}{4}$ N. (42 miles).	140	do	66	T.
176	do	42	38 $\frac{1}{2}$	About as last.	175	Mud	do	38 $\frac{1}{2}$ T.
177	do	42	38 $\frac{1}{2}$	2 miles N. of last place.	do	do	do	T.
178	do	42	38 $\frac{1}{2}$	About as last.	do	do	do	T.
179	Aug. 29	42	38 $\frac{1}{2}$	do	do	do	do	T.
180	do	42	24	Gloucester Harbor, just off Fresh Water Cove.	7	Fine sand	68	T.
181	do	42	24	About same as last.	10	do	67	39 T.
182	do	42	30 $\frac{1}{2}$	Eastern Point Light N. $\frac{1}{4}$ W. 7 (11?) miles, Thatcher's Island Light N. by E. $\frac{1}{4}$ E. 14 $\frac{1}{2}$ miles.	45	Mud	73 $\frac{1}{2}$	T.
183	do	42	30 $\frac{1}{2}$	About a mile E. of No. 181.	45	Mud, gravel, and pebbles.	64 $\frac{1}{2}$	D.
184	do	42	33	Eastern Point Light N. $\frac{1}{4}$ W. 4 $\frac{1}{2}$ miles, Baker's Island Light SW. by S. 8.7 miles.	45	Mud	75	T.
185	Aug. 31	42	33	A little to NE. of No. 182.	110	Muddy	68 $\frac{1}{2}$	39 D.
186	do	42	33	Eastern Point Light W. by N. 33 miles, Boone Island Light N. NW. 42 $\frac{1}{2}$ miles, White Island Light NW. $\frac{1}{4}$ N. 42 miles.	*110	do	do	D.
187	do	42	33	About same as No. 185.	110	Soft brown mud.	73 $\frac{1}{2}$	T.
188	do	42	33	About same as last.	85	Sandy mud and gravel.	68 $\frac{1}{2}$	Tan.
189	do	42	33	About 2 miles W. of No. 187.	85	Gravel and pebbles.	65 $\frac{1}{2}$	Ag. D.
190	do	42	33	About same as No. 188.	*100	Muddy	40	T.
191	do	42	33	About same as last, drifting towards E.	*100	Soft brown mud.	do	T.
192	do	42	33	Somewhat E. of last.	100-110	do	do	T.
193	do	42	33	Somewhat SSW. of last.	*110	Mud, harder at end.	do	T.
194	do	42	33	Somewhat E. of last.	*110	Muddy, harder than fast.	do	T.

* Estimated.

Serial number	Date.	Latitude.	Longitude.	Locality.	Nature of bottom.	Temperatures.		Apparatus used.	
						Depth in fath.	Air.		
195	Sept. 2	° 42' 27"	70° 19'	{ Eastern Point Light NW. $\frac{1}{4}$ W. 16 $\frac{2}{3}$ miles, Eastern Light Thatcher's Island NW. by N. 15 $\frac{1}{2}$ miles,	Coarse sand.....	33-29	72 $\frac{1}{2}$	° 45 $\frac{1}{2}$	
196	do	42 25 $\frac{1}{2}$	70 23	1 mile SSW. from No. 195.	Stony, sponges and gravel.....	29	63 $\frac{1}{2}$	{ 48 $\frac{1}{2}$	
197	do	42	70	Eastern Point Light NW. $\frac{1}{4}$ N. 15 miles, Eastern Light Thatcher's Island NNW. 14 $\frac{1}{2}$ miles, 3 $\frac{1}{3}$ miles W. from No. 196.	Stony and spongy.....	23	.....	47 $\frac{1}{2}$
198	do	42 31	70 20	Eastern Light Thatcher's Island NW. $\frac{1}{4}$ N. 12 $\frac{2}{3}$ miles.....	Coarse sand and mud.....	50	72 $\frac{1}{2}$	T.	
199	do	.....	.....	No. 198, Eastern Light Thatcher's Island NW. $\frac{1}{4}$ N. 13 $\frac{1}{2}$ miles.	Muddy	98	71 $\frac{1}{2}$	64 $\frac{1}{2}$
+	Sept. 9	.....	.....	Gloucester Harbor, off Norman's Woe	Sandy and rocky	10	64 $\frac{1}{2}$	T.
+	200	.....	.....	Gloucester Harbor, off Minusel Cove	Sandy mud	8 $\frac{1}{2}$	63 $\frac{1}{2}$	T.
+	201	do	.....	Gloucester Harbor, off Norman's Woe	Abundant red algae	8-10	61	56 $\frac{1}{2}$
+	202	do	.....	Off Gloucester, Eastern Point Light N. by W. $\frac{3}{4}$ W. 43 miles, Baker's Island Light WNW. 8 miles, drifting to SW.	Muddy with large stones	42	60 $\frac{1}{2}$	T.
203	Sept. 16	42 31	70 37	do	Rocky	62 $\frac{1}{2}$	60 $\frac{1}{2}$	D.	
204	do	.....	.....	Soft brown mud	40	63	47 $\frac{1}{2}$	D.
205	do	.....	.....	do	42	60 $\frac{1}{2}$	48 $\frac{1}{2}$	D.
206	do	.....	.....	Muddy	42	60 $\frac{1}{2}$	48 $\frac{1}{2}$	T.
207	do	.....	.....	Soft brown mud	42	65	48 $\frac{1}{2}$	T.
208	do	.....	.....	Rocky	19-23	63 $\frac{1}{2}$	60	D.
209	do	.....	.....	do	17	64	48 $\frac{1}{2}$	D.
210	Sept. 17	42 38	70 28 $\frac{1}{2}$	N. by W. $\frac{3}{4}$ miles, 3 miles N. by W. $\frac{1}{4}$ W. from No. 208, $\frac{1}{2}$ mile from Kettle Island.	Rock, gravel, and mud	60	60 $\frac{1}{2}$	43	D.
211	do	Off Capo Ann, Salvages NW. 5 miles, Eastern Point W. $\frac{3}{4}$ S. 9 miles.	Soft dark-brown mud	60	66	43	D.
212	do	About a mile E. of No. 210.....	do	68	65 $\frac{1}{2}$	42 $\frac{1}{2}$	D.
213	do	About $\frac{1}{2}$ mile S. 11 $\frac{1}{2}$ E. of No. 210.....	do	68	60 $\frac{1}{2}$	42 $\frac{1}{2}$	T.
214	do	About $\frac{1}{2}$ mile E. by S. $\frac{1}{2}$ S. of No. 212.....	do	68	60 $\frac{1}{2}$	42 $\frac{1}{2}$	T.
215	Sept. 18	42 31	70 32	A little SW. of No. 213.....	Fine mud and sand	57	65 $\frac{1}{2}$	50 $\frac{1}{2}$	D.
216	do	42 30	70 35	Eastern Point Light NW. $\frac{1}{4}$ N. 7 $\frac{1}{2}$ miles, Thatcher's Island Light N. $\frac{1}{4}$ W. $\frac{1}{4}$ miles.	Fine sand and few small pebbles	35	62	50 $\frac{1}{2}$	T.
217	do	42 30	70 35	do	Sandy	45	50 $\frac{1}{2}$	T.
218	d ₉	do	Soft dark-brown mud	50 $\frac{1}{2}$	T.
219	do	do	do	45	50 $\frac{1}{2}$	T.

219	do	42	30	70	33	Eastern Point Light NW $\frac{3}{4}$ N. 7½ miles, Thatcher's Island Light, N. 8½ miles; a mile SW from No. 215.	32	Rocky, stones of all sizes..	70½	63	55½	D.
220	do	42	32	70	35	Eastern Point Light NW $\frac{3}{4}$ N. 4½ miles, Thatcher's Island Light N. by E. $\frac{1}{4}$ E. $\frac{1}{4}$ miles.	42	Soft brown mud	67½	62	49½	T.
221	Sept. 21	42	32	70	31	Eastern Point Light NW $\frac{3}{4}$ N. 6½ miles, Thatcher's Island Light N. by W. $\frac{1}{4}$ W. 5½ miles.	37-38	Fine sandy mud	67½	62	49½	D.
222	do	42	32	70	31	Eastern Point Light NW $\frac{3}{4}$ N. 6½ miles, Thatcher's Island Light N. by E. $\frac{1}{4}$ E. $\frac{1}{4}$ miles.	40	Soft brown mud	67½	62	49½	T.
223	do	42	32	70	31	Eastern Point Light NW $\frac{3}{4}$ N. 6½ miles, Thatcher's Island Light N. by E. $\frac{1}{4}$ E. $\frac{1}{4}$ miles.	47	do	67½	62	49½	T.
224	do	42	32	70	31	Eastern Point Light NW $\frac{3}{4}$ N. 6½ miles, Thatcher's Island Light N. by E. from No. 223.	47	do	67½	62	49½	T.
225	do	42	32	70	31	Eastern Point Light NW $\frac{3}{4}$ N. 6½ miles, Thatcher's Island Light N. by E. from No. 223.	26	Rocky	71½	62½	53	Tan.
226	Sept. 23	42	36	70	36	Off Cape Ann, Eastern Point Light W. by S. $\frac{1}{2}$ S. 3 miles, Thatcher's Island Light NE $\frac{1}{2}$ miles.	18	Irregular, rocky	60½	58	58	D. and Tan.
227	do	42	32	70	40	Off Gloucester, Eastern Point Light NNE, 14 miles, S. end Kettle Island E. by S. $\frac{1}{2}$ S. 24 miles.	23	Rock, sand, and gravel	64½	60½	58	D. and Tan.
228	do	42	32	70	38	Eastern Point Light NE, 24 miles SW. from No. 227.	19	Rock and sand	60½	58	58	D. and Tan.
229	do	42	32	70	38	Eastern Point Light NE. by N. $\frac{1}{4}$ N. $\frac{1}{2}$ mile, $\frac{1}{2}$ mile N. of S. end Kettle Island N. $\frac{1}{2}$ mile, between Nos. 208 and 209 Gloucester Harbor, just outside Fresh Water Cove, Eastern Point Light SE.	19	Rocky and coarse sand	60½	58	58	D.
230	do	42	32	70	38	Eastern Point Light N. $\frac{3}{4}$ W. $\frac{1}{4}$ miles, Thatcher's Island Light NNE, 24 miles SW. from No. 227.	21	Rock, fine mud, and sand	59½	60½	57½	D.
231	do	42	32	70	38	Eastern Point Light N. $\frac{3}{4}$ W. $\frac{1}{4}$ miles, Thatcher's Island Light NNE, 24 miles SW. from No. 227.	7	Fine white sand and red algae.	60½	60½	57½	T.
232	Sept. 24	42	30½	70	38	Eastern Point Light N. $\frac{3}{4}$ W. $\frac{1}{4}$ miles, Thatcher's Island Light NNE, 24 miles SW. from No. 227.	45	Soft brown mud	62½	61½	42	D.
233	do	42	32	70	38	Eastern Point Light N. by W. $\frac{1}{4}$ W. from No. 222.	45	do	60½	58	58	T.
234	do	42	32	70	39	Eastern Point Light N. by W. $\frac{1}{4}$ W. from No. 222, which is probably correct.	43	do	60½	58	58	T.
235	do	42	32	70	39	Eastern Point Light N. by W. $\frac{1}{4}$ W. $\frac{1}{2}$ miles, close to No. 135, Island Lights XKE, N. $\frac{1}{2}$ miles.	22	Rocky	60½	58	58	Tan.
236	Sept. 26	42	28	70	31	Eastern Point Light NW. by N. 9½ miles, Thatcher's Island Lights N. $\frac{1}{4}$ W. 10½ miles.	28	Rocky, coarse sand, and pebbles.	68½	61	48½	D.
237	do	42	31	70	29	Eastern Point Light NW $\frac{3}{4}$ W. 9 miles, Thatcher's Island Lights X. by W. $\frac{1}{4}$ W. 8½ miles.	38	Coarse sand and gravel	66	61½	49½	D.
238	do	42	30½	70	38	Eastern Point Light N. by W. $\frac{1}{4}$ miles, Thatcher's Island Lights NNE. $\frac{3}{4}$ E. 7½ miles, close to No. 222.	43	Soft brown mud	69	61½	58	T.

DREDGINGS BY SPEEDWELL, 1879.

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239	July 21	1879	°	'	°	Cape Cod Bay, Wood End Light N. 18° E., Indian Hill N. 7½ W.	13	Blue mud and fine sand	70½	°	°	D.
240	do	41	52½	70	15	Wood End Light N. 19° E., Rocky Point N. 74° W.	18	Blue mud and fine sand	69½	67	64½	T.
241	do	41	57	70	12	Wood End Light N. 16° E., Billingsgate Light S. 35° E.	19	do	67	67	62½	D.
242	do	41	59	70	13	Race Point Light N. 90° W., Cape Cod Light N. 66° E.	21	Blue mud	72	67	62½	T.
243	do	42	61	70	12	Race Point Light N. 25° W., Wood End Light N. 58° E.	20	do	69	66½	60½	T.
244	July 22	42	04½	70	15½	Race Point Light S. 50° E. (dredge) 1 mile, (trawl) 1½ miles, 4 miles.	25-30	Fine gray sand	70	58	49½	D. and T.
245	do	{ 42	08	70	17	Race Point Light S. 27° E. (dredge) 5½ miles, S. 7 W. (trawl) 70	28	do	70	58	49½	D. and T.

DREDGINGS BY SPEEDWELL, 1870—Continued.

Serial number.	Date.	Latitude.	Longitude.	Locality.	Depth in fath.	Depth in fms.	Nature of bottom.	Temperatures.		Apparatus used.
								Air.	Surface.	
246	July 25	° 42' 06"	' 14'	Race Point Light S. 11° E. 21 miles, "Spider Ground."	28	Fine gray sand.....	o	o	63	D.
247	do	42' 07"	15'	Race Point Light S. 20° E. 31 miles.....	34	do	o	o	63	D.
248	do	42' 08"	14'	Race Point Light S. 1 W. 31 miles.....	32	do	66	63	63	D.
249	do	42' 08"	13'	Race Point Light S. 13° W. 43 miles.....	30	Coarse sand.....	65	62	62	T.
250	do	42' 09"	13'	Race Point Light S. 9° W. 51 miles.....	30	do	66	62	62	T.
251	do	42' 10"	10'	Race Point Light S. 23° W. 63 miles.....	24	Coarse sand and gravel.....	65	60	60	D.
252	do	42' 09"	10'	Race Point Light S. 34° W. 64 miles.....	27	Fine gray sand and gravel.....	66	62	62	T.
253	July 28	41' 57"	70'	Cape Cod Bay, "Fishing Ledge," Wood End Light N. 50° E. 7 miles.	17	Rocky	72	65	65	D.
254	do	do	do	do	21	Sandy	75	65	65	D.
255	do	do	do	do	18	Rocky	76	66	66	D.
256, 257	do	do	do	do	16	do	78	68	68	D.
258	do	41' 55"	70'	Cape Cod Bay, Wood End Light NE. 1 E. 9½ miles.....	29	Soft mud.....	72	64	64	T.
259	do	41' 57"	70'	Cape Cod Bay, Wood End Light ENE. 10½ miles.....	24	Blue mud	71	64	64	T.
260	do	41' 58"	70'	Cape Cod Bay, Wood End Light ENE. 7½ miles.....	25	Green mud	74	63	63	T.
261	do	42' 00"	70'	Cape Cod Bay, Wood End Light ENE. 3½ miles.....	26	Mud	74	63	63	T.
262	July 29	42' 11"	69	Off Cape Cod, Race Point Light S. 63° W. 14 miles.....	27	Blue mud	71	65	65	D.
263	do	do	do	do	83	do	71	65	65	D.
264	do	42' 10"	69'	Off Cape Cod, Race Point Light S. 65° W. 15 miles.....	80	do	71	65	65	T.
265	do	42' 09"	69'	Off Cape Cod, Cape Cod Light S. 30° W. 10 miles.....	72	Gravel	71	65	65	T.
266	do	42' 12"	69'	Off Cape Cod, Cape Cod Light S. 42° W. 13 miles.....	120	Blue mud	71	65	65	T.
267	July 31	42' 13"	69'	Race Point Light S. 81° W. 26 miles.....	135	do	70	68	68	D.
268	do	42' 12"	69'	Race Point Light S. 84° W. 26 miles.....	129	do	70	67	67	D.
269	do	42' 08"	69'	Off Cape Cod, Cape Cod Light S. 67° W. 9 miles.....	53	Gravel	70	64	64	T.
270	do	42' 06"	69'	Off Cape Cod, Cape Cod Light S. 68° W. 7 miles.....	42	Blue sand and gravel	71	64	64	T.
271	Aug. 1	42' 06"	70'	Off Cape Cod, Race Point Light S. 12° W. 21 miles.....	34	Fine yellow sand	70	66	66	D.
272	do	42' 07"	70'	Off Cape Cod, Race Point Light S. 29° W. 3 miles.....	34	Yellow sand	70	66	66	T.
273	do	42' 07"	70'	Off Cape Cod, Race Point Light S. 40° W. 3½ miles.....	25	Coarse yellow sand and gravel	69	67	67	D.
274	do	42' 09"	70'	Off Cape Cod, Cape Cod Light S. 11° E. 7 miles.....	30	Coarse yellow sand and broken shells	73	68	68	D.
275	do	do	do	do	29	Green mud	72	66	66	T.
276	do	42' 08"	70'	Off Cape Cod, Cape Cod Light S. 20° W. 6½ miles.....	47	Blue mud	71	66	66	T.
277	do	42' 02"	70'	Cape Cod Bay, Wood End Light S. 70° E. 3 miles.....	28	Sand and shells	74	42	42	T.
278	Aug. 4	42' 09"	70'	Provincetown Harbor, Long Point Light S. 70° E. 4 miles.....	9	Sandy	70	69	69	D.
279	do	42' 09"	70'	On Stellwagen's Bank, Race Point Light S. 64° miles.....	13-14	Sand	74	63	63	D.
280	do	42' 09"	70'	On Stellwagen's Bank, Race Point Light S. 17° E. 6½ miles.....	12-13½	Yellow sand and gravel	76	44	44	D.
281	do	42' 12"	70'	On Stellwagen's Bank, Race Point Light S. 12° E. 8½ miles.....	14	Fine yellow sand and broken shells	76	62	62	D.

DREDGING STATIONS OF U. S. FISH COMMISSION.

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282	do	42	13	70	13½	On Stellwagen's Bank, Race Point Light S. 30° W. 9½ miles...	31	Sand and green mud.....	72½	61½	43	D.
283	do	42	09½	70	22	Southwest of Stellwagen's Bank, Race Point Light S. 44° E. 8½ miles.	31	Sand and green mud.....	70.7	65½	39	D.
284	do	42	10	70	22	do.....	31	Green mud.....	69	68	39	T.
285	Aug. 6	42	12	70	25	Southwest of Stellwagen's Bank, Race Point Light S. 44° E. 11 miles.	31	do.....	70.7	65½	39	D.
286	do	42	16½	70	23	West of Stellwagen's Bank, Race Point Light S. 14° E. 14 miles.	37	do.....	71	67	39½	D.
287	do	42	17½	70	25½	West of Stellwagen's Bank, Race Point Light S. 20° E. 16 miles.	47½	do.....	68	67½	38½	T.
288	do	42	20	70	27	West of Stellwagen's Bank, Race Point Light S. 20° E. 19 miles.	33	Fine blue sand and shells.	72	67.3	38½	T.
289	do	42	19	70	25	Same as last in Record Book; nearly 2 miles SE. on chart.	45	Fine gray sand.....	68½	68½	38	T.
290	Aug. 11	42	04½	70	16	Mouth Cape Cod Bay, Race Point Light S. 86° N. E. 1½ miles...	31	do.....	72	63½	38	D.
291	do	42	04½	70	16½	Mouth Cape Cod Bay, Race Point Light S. 85° N. E. 1½ miles...	30	do.....	64	40	38	D.
292	do	42	03½	70	18½	Mouth Cape Cod Bay, Race Point Light N. 85° E. 2½ miles...	29	Blue mud, fine sand.....	65	41	41	D.
293	do	42	03½	70	19½	Mouth Cape Cod Bay, Race Point Light N. 86° E. 3½ miles...	27	Green mud.....	65½	39½	39½	D.
294	do	42	03½	70	24½	Mouth Cape Cod Bay, Race Point Light N. 86° E. 6½ miles...	26	do.....	66½	39	39	T.
295	do	42	03	70	24½	Mouth Cape Cod Bay, Race Point Light N. 85° E. 7½ miles...	26	do.....	67	65½	39½	D.
296	do	42	02½	70	26	Mouth Cape Cod Bay, Race Point Light N. 86° E. 9 miles...	26	do.....	68½	65	39	D.
297	do	42	02½	70	29	Mouth Cape Cod Bay, Race Point Light N. 86° E. 11 miles...	22	Fine sand.....	69	65	39½	D.
298	Aug. 20	42	02½	70	32	Mouth Cape Cod Bay, Gurnet Point Light S. 75° W. 34° miles.	16	Fine brown sand.....	64	61½	55½	D.
298a	do	42	00½	70	30	Mouth Cape Cod Bay, Gurnet Point Light S. 88° W. 41° miles.	20	Brown sand and pebbles.....	68	59	44	D.
299	do	42	01½	70	30	Mouth Cape Cod Bay, Gurnet Point Light S. 74° W. 4½ miles.	21	Brown sand and pebbles.....	66	61½	45	T.
300	do	42	01½	70	29	Mouth Cape Cod Bay, Gurnet Point Light S. 75° W. 5 miles, ½ mile S. of No. 297.	20	Brown sand and pebbles.....	68	61½	45	T.
301, 301a	do	42	01½	70	20	Mouth Cape Cod Bay, Race Point Light N. 65° E. 5 miles.....	27	Soft brown mud.....	66	60	42½	D. and R. D.
302	Aug. 21	42	12½	69	46	Off Cape Cod, Cape Cod Light S. 51° W. 16½ miles.....	124	Fine brown mud.....	68	60	42½	D. and R. D.
303	do	42	11½	69	47	Off Cape Cod, Cape Cod Light S. 51° W. 15 miles.....	122	Soft brown mud.....	71	61½	41	T.
304	do	42	10	69	45	Off Cape Cod, Cape Cod Light S. 61° W. 15 miles.....	122	do.....	75½	61½	41	T.
305	do	42	09½	69	41	Race Point Light, Cape Cod Light S. 68° W. 18 miles.....	118	do.....	69	61	41	T.
306	Aug. 25	42	06½	70	20	Race Point Light S. 56° E. 6 miles.....	30	Blue mud.....	63	61	41	T.
307	do	42	06½	70	18	Race Point Light S. 46° E. 4½ miles.....	31	Blue mud and fine sand.....	65	61½	43½	T.
308	do	42	08½	70	18	Race Point Light S. 28° E. 5½ miles, S. edge Stellwagen's Bank.	26	Fine sand and broken shells.	64	61½	41	D.
309	do	42	08½	70	17	Race Point Light S. 23° E. 5½ miles, E. of No. 308.	27	Fine yellow sand.....	66	60½	40½	T.
310	Aug. 29	42	01	70	11	Cape Cod Bay, Wood End Light N. 36° W. 1½ miles.....	27	Blue mud, fine sand.....	63	69½	47½	D.
311	do	42	00	70	10	Cape Cod Bay, Wood End Light N. 36° W. 1½ miles.....	16	do.....	67½	61½	49	R.D.
312	do	41	59½	70	09	Cape Cod Bay, Wood End Light N. 41° W. 2½ miles.....	15	Mud and sand.....	62	50	50½	R.D.
313	do	41	58	70	09	Cape Cod Bay, Wood End Light N. 26° W. 3½ miles.....	15	Blue mud.....	64	61	61	R.D.
314	do	41	56	70	07	Cape Cod Bay, Wood End Light N. 31° W. 6 miles.....	10	Coarse sand.....	67	61½	56	T.
315	do	41	55	70	07	Cape Cod Bay, Wood End Light N. 25° W. 7 miles.....	6	Coarse sand and gravel.....	66	63½	56	T.
316	do	41	56½	70	08½	Cape Cod Bay, Wood End Light N. 36° W. 5½ miles.....	8	do.....	69	62	63	D.
317	Aug. 30	42	02	70	14	Cape Cod Bay, Race Point Light N. 30° W. 14½ miles.....	25	Blue mud.....	59	60	44½	D.
318	do	42	01½	70	15	Cape Cod Bay, Race Point Light N. 14° E. 2½ miles.....	25	do.....	61	61½	44½	T.
319	do	42	02½	70	15	Cape Cod Bay, Race Point Light N. 10° E. 1½ miles.....	26½	do.....	60	60	44½	T.
320	do	42	02½	70	15	Cape Cod Bay, Race Point Light N. 38° E. 1½ miles.....	29	Fine gray sand.....	63½	61	44½	R.D.
321	do	42	03	70	15	Cape Cod Bay, Race Point Light N. 62° E. 1 mile.....	29½	do.....	65	61	44½	T.
322	Sept. 1	42	12½	70	01	OH Cape Cod, Cape Cod Light S. 49° W. 10 miles.....	67	Speckled sand, broken shells.	66	60	40½	D.
323	do	42	13½	70	01½	Off Cape Cod, Cape Cod Light S. 6° W. 11 miles.....	60	Speckled sand.....	67½	58	40½	T.

DREDGINGS BY SPEEDWELL, 1879—Continued.

Serial number.	Date.	Latitude.	Longitude.	Locality.	Nature of bottom.	Temperatures.		Apparatus used.
						Depth in fath.	Bottom.	
324	Sept. 1	° 42 12 $\frac{1}{2}$	' 70 03	Off Cape Cod, Cape Cod Light S. 2° W. 11 miles.....	45 Coarse sand, black specks, broken shells.	° 67	° 61	° 40 $\frac{1}{2}$ T.
325	do	42 14 $\frac{1}{2}$	70 00 $\frac{1}{2}$	Off Cape Cod, Cape Cod Light S. 8° W. 13 miles.....	83 Green mud.....	° 67	° 61	40 $\frac{1}{2}$ T.
326	do	42 14 $\frac{1}{2}$	70 12 $\frac{1}{2}$	Off Cape Cod, Cape Cod Light S. 4° W. 12 $\frac{1}{2}$ miles.....	73 do	° 70	59 $\frac{1}{2}$	40 $\frac{1}{2}$ Ag. T.
327	Sept. 6	42 11	70 12 $\frac{1}{2}$	S. end Stellwagen's Bank, Race Point Light S. 11° W. 7 $\frac{1}{2}$ miles.	17 Coarse sand, black specks.	° 61 $\frac{1}{2}$	60	44 $\frac{1}{2}$ D.
328	do	42 10	70 13	Off S. end Stellwagen's Bank, Race Point Light S. 11° W. 6 $\frac{1}{2}$ miles.	23 do	° 72	60 $\frac{1}{2}$	O. T.
329	do	42 09	70 12	Off S. end Stellwagen's Bank, Race Point Light S. 17° W. 5 $\frac{1}{2}$ miles.	26 Fine brown sand, pebbles.	° 67 $\frac{1}{2}$	60	42 R. D.
330	do	42 09 $\frac{1}{2}$	70 13	Off S. end Stellwagen's Bank, Race Point Light S. 8° W. 6 miles.	26 do	° 68	60	42 T.
331	do	42 09 $\frac{1}{2}$	70 14	Off S. end Stellwagen's Bank, Race Point Light S. 2° W. 5 $\frac{1}{2}$ miles.	28 Fine brown sand, black specks.	° 67	60 $\frac{1}{2}$	41 $\frac{1}{2}$ T.
332	do	42 09	70 15	Off S. end Stellwagen's Bank, Race Point Light S. 6° E. 5 $\frac{1}{2}$ miles.	28 Fine brown sand, shells.....	° 70	61	42 T.
333	do	42 08 $\frac{1}{2}$	70 16 $\frac{1}{2}$	Off S. end Stellwagen's Bank, Race Point Light S. 18° E. 5 $\frac{1}{2}$ miles.	27 do	° 71	61	42 $\frac{1}{2}$ R. D.
334	do	42 08 $\frac{1}{2}$	70 18	Off S. end Stellwagen's Bank, Race Point Light S. 28° E. 5 $\frac{1}{2}$ miles.	27 Fine yellow sand	° 74	61 $\frac{1}{2}$	42 Ag. T.
335	Sept. 9	41 58 $\frac{1}{2}$	70 34 $\frac{1}{2}$	Off Plymouth, Gurnet Point Light N. 30° W. 13 miles.....	7 Green mud, sand, with dead eel-grass.	° 62	61 $\frac{1}{2}$	55 D.
336	do	41 58	70 33 $\frac{1}{2}$	Off Plymouth, Gurnet Point Light N. 40° W. 2 $\frac{1}{2}$ miles	11 $\frac{1}{2}$ Brown sand, specks, eel-grass.	° 60	61 $\frac{1}{2}$	50 T.
337	do	41 57 $\frac{1}{2}$	70 30 $\frac{1}{2}$	Off Plymouth, Gurnet Point Light N. 58° W. 4 $\frac{1}{2}$ miles.....	16 Green mud and sand.....	° 70	62	47 $\frac{1}{2}$ D.
338	do	41 57 $\frac{1}{2}$	70 28	Off Plymouth, Gurnet Point Light N. 60° W. 6 $\frac{1}{2}$ miles.....	18 Sand, blue mud	° 71	62 $\frac{1}{2}$	49 $\frac{1}{2}$ T.
339	do	41 54	70 28	Cape Cod Bay, Manomet Point N. 67° W. 3 $\frac{1}{2}$ miles.....	14 $\frac{1}{2}$ Mud and sand	° 75	63	47 $\frac{1}{2}$ T.
340	do	41 51	70 27 $\frac{1}{2}$	S. of No. 338. Cape Cod Bay, Manomet Point N. 38° W. 6 miles.....	14 Brown sand and mud.....	° 66 $\frac{1}{2}$	63	49 $\frac{1}{2}$ D.
341	do	41 51 $\frac{1}{2}$	70 21 $\frac{1}{2}$	Cape Cod Bay, Manomet Point N. 68° W. 9 miles.....	15 $\frac{1}{2}$ Green mud, sand.....	° 65 $\frac{1}{2}$	63 $\frac{1}{2}$	48 T.
342	Sept. 10	42 16	69 56	Off Cape Cod, Cape Cod Light S. 22° W. 14 miles.	94 Brown mud	° 63 $\frac{1}{2}$	58 $\frac{1}{2}$	41 $\frac{1}{2}$ T.
343	do	42 17	69 51	Off Cape Cod, Cape Cod Light S. 33° W. 17 $\frac{1}{2}$ miles	116 do	° 63	57	41 $\frac{1}{2}$ T.
344	do	42 19	69 47 $\frac{1}{2}$	Off Cape Cod, Cape Cod Light S. 35° W. 15 miles (20 miles on original chart).	130 do	° 64	57 $\frac{1}{2}$	41 $\frac{1}{2}$ T.
345	Sept. 13	42 19 $\frac{1}{2}$	70 45	Off Boston Harbor, Minot's Ledge Light S. 34 miles	16 Speckled sand and shells.....	° 60	61 $\frac{1}{2}$	46 $\frac{1}{2}$ D.
346	do	42 16	70 38	Massachusetts Bay, Minot's Ledge Light W. 3 $\frac{1}{2}$ miles	22 Pebbles and broken shells.....	° 66 $\frac{1}{2}$	61 $\frac{1}{2}$	44 $\frac{1}{2}$ T.
347	do	42 12 $\frac{1}{2}$	70 33 $\frac{1}{2}$	Massachusetts Bay, Minot's Ledge Light N. 60° W. 9 miles.....	20 Speckled sand	° 65	61 $\frac{1}{2}$	46 $\frac{1}{2}$ T.
348	do	42 09 $\frac{1}{2}$	70 32 $\frac{1}{2}$	Massachusetts Bay, Standish Monument (near Duxbury) N. 35° W. 10 miles.	24 Gravel and sand	° 62 $\frac{1}{2}$	62 $\frac{1}{2}$	46 $\frac{1}{2}$ D.

	O. T.	
26	Standish Monument S. 36° W. 13 miles	61.3
29	Standish Monument S. 56° W. 13 miles	61.3
70	Race Point Light S. 74° E. 6 miles	61.3
20	Cape Cod Bay, Billingsgate Light S. 53° E. 4 miles	43.4
350	Cape Cod Bay, Billingsgate Light N. 74° E. 6 miles	43.4
351	Cape Cod Bay, Billingsgate Light N. 74° E. 5 miles	42.4
352	Cape Cod Bay, Billingsgate Light N. 74° E. 5 miles	42.4
353	Cape Cod Bay, Billingsgate Light N. 74° E. 5 miles	42.4
354	Cape Cod Bay, Billingsgate Light N. 74° E. 6 miles	42.4
355	Cape Cod Bay, Billingsgate Light N. 74° E. 7 miles	42.4
356	Cape Cod Bay, Billingsgate Light N. 74° E. 7 miles	42.4
357	Cape Cod Bay, Billingsgate Light N. 48° E. 5½ miles	42.4
358	Cape Cod Bay, Billingsgate Light S. 63° E. 5½ miles	42.4
359	Off Cape Cod, Cape Cod Light S. 80° W. 30 miles	42.4
360	Off Cape Cod, Cape Cod Light S. 80° W. 30 miles	42.4
361	Off Cape Cod, Cape Cod Light S. 80° W. 26 miles	42.4
362	Off Cape Cod, Cape Cod Light N. 80° W. 21 miles	42.4
363	Off Cape Cod, Cape Cod Light N. 84° W. 20 miles	42.4
364	Off Cape Cod, Cape Cod Light N. 75° W. 15 miles	42.4
365	Off Cape Cod, Cape Cod Light N. 45° W. 23 miles	42.4
366	Off Chatham, Chatham Light N. 55° W. 44 miles	42.4
367	Off Chatham, Chatham Light N. 67° W. 53 miles	42.4
368	Off Chatham, Chatham Light N. 84° W. 6 miles	42.4
369	Off Chatham, Chatham Light S. 78° W. 64 miles	42.4
370	Off Chatham, Chatham Light N. 75° W. 12 miles	42.4
371	Off Chatham, Chatham Light N. 72° W. 16 miles	42.4
372	Off Chatham, Chatham Light W. 21 miles	42.4
373	Off Cape Cod, Cape Cod Light S. 32° W. 5 miles	42.4
374	Off Cape Cod, Cape Cod Light S. 75° W. 6½ miles	42.4
375	Off Cape Cod, Cape Cod Light S. 72° W. 7 miles	42.4
376	Off Cape Cod, Cape Cod Light S. 85° W. 13 miles	42.4
377	Off Cape Cod, Cape Cod Light S. 85° W. 17½ miles	42.4
378	Off Cape Cod, Cape Cod Light S. 85° W. 17½ miles	42.4
31	Bluff mud	61.3
30	do	61.3
10½	Sand and gravel	62.3
14	Green mud	62.3
7	Coarse yellow sand	63.3
7	Fine sand, pebbles	63.3
7½	Fine brown sand	64.3
15	Blue mud	64.3
105	Green mud	64.3
106	Gray mud	64.3
102	do	64.3
106	do	64.3
108	Mud, fine gravel	64.3
70	Hard sand, broken shells	64.3
7½	Coarse sand	64.3
11	Fine sand	64.3
12	do	64.3
15	Coarse sand, gravel	64.3
18	do	64.3
18	Speckled sand	64.3
34½	Coarse speckled sand	64.3
70	Sand and pebbles	64.3
42	Fine gray sand, black specks	64.3
46	Fine sand, broken shells	64.3
46	Coarse sand	64.3
46	do	64.3
94	Brown mud	64.3
96	do	64.3

A series of temperature observations was made by the Speedwell on September 25 and 29, 1879. These had separate numbers from No. 1 to No. 25, and as no dredgings or natural-history observations were made, they have been placed after the tables of dredging localities. Their localities, &c., will be found on the following page (38), and the serial temperatures taken on those days are placed on page 43, at the end of the tables of serial temperatures taken in the course of dredging expeditions.

* TEMPERATURE OBSERVATIONS BY THE SPEEDWELL, SEPTEMBER 25 AND 29, 1879.

Serial number.	Date.	Locality.	Depth in fath- oms.	Temperatures.		
				Air.	Surface.	Bottom.
1	Sept. 25	1879.	Long Point WNW. $\frac{3}{4}$ mile.....	17	o	o
2	25	Wood End Light NW. $\frac{1}{4}$ mile.....	21		55 $\frac{1}{2}$	47 $\frac{1}{2}$
3	29	Wood End Light NE. $\frac{1}{4}$ mile.....	22		59	45
4	29	Wood End Light N. 80° E. 2 miles.....	24 $\frac{1}{2}$		57 $\frac{1}{2}$	44 $\frac{1}{2}$
5	29	Wood End Light N. 55° E. $3\frac{1}{4}$ miles.....	21		57 $\frac{1}{2}$	45
6	29	Wood End Light N. 48° E. $5\frac{1}{4}$ miles.....	21		57 $\frac{1}{2}$	45 $\frac{1}{2}$
7	29	Wood End Light N. 45° E. $7\frac{1}{4}$ miles.....	19 $\frac{1}{2}$		58 $\frac{1}{2}$	46 $\frac{1}{2}$
8	29	Wood End Light N. 50° E. $7\frac{1}{2}$ miles.....	19 $\frac{1}{2}$		58 $\frac{1}{2}$	46
9	29	Wood End Light N. 66° E. $6\frac{1}{4}$ miles.....	24		59 $\frac{1}{2}$	44 $\frac{1}{2}$
10	29	Wood End Light N. 85° E. 6 miles.....	26	69 $\frac{1}{2}$	58	44
11	29	Wood End Light S. 75° E. $5\frac{1}{4}$ miles.....	30	69 $\frac{1}{2}$	58 $\frac{1}{2}$	44
12	29	Race Point Light S. 71° E. 3 miles.....	33	66		44
13	29	Race Point Light S. 45° E. $4\frac{1}{2}$ miles.....	34	66	57 $\frac{1}{2}$	44 $\frac{1}{2}$
14	29	Race Point Light S. 32° E. 6 miles.....	11	67	58	51 $\frac{1}{2}$
15	29	Race Point Light S. 13° E. $5\frac{1}{4}$ miles.....	23	63 $\frac{1}{2}$	57 $\frac{1}{2}$	52 $\frac{1}{2}$
16	29	Race Point Light S. 10° W. 6 miles.....	19	62 $\frac{1}{2}$	58	49
17	29	Race Point Light S. 30° W. $6\frac{1}{2}$ miles.....	26	63	57 $\frac{1}{2}$	46 $\frac{1}{2}$
18	29	Race Point Light S. 51° W. $8\frac{1}{4}$ miles.....	28	62 $\frac{1}{2}$	57	45
19	29	Race Point Light S. 58° W. $9\frac{1}{4}$ miles.....	49	62 $\frac{1}{2}$	57 $\frac{1}{2}$	43 $\frac{1}{2}$
20	29	Race Point Light S. 70° W. $9\frac{1}{2}$ miles.....	32	62 $\frac{1}{2}$	57	44
21	29	Race Point Light S. 66° W. $5\frac{1}{2}$ miles.....	21	64	57	45
22	29	Race Point Light S. 42° W. $5\frac{1}{2}$ miles.....	28	62 $\frac{1}{2}$	56 $\frac{1}{2}$	46
23	29	Race Point Light S. 18° W. $2\frac{1}{2}$ miles.....	33		57 $\frac{1}{2}$	44
24	29	Race Point Light S. 83° E. 2 miles.....	30	61	58	44
25	29	Race Point Light N. 16° E. $2\frac{1}{4}$ miles.....	27	61	58	44 $\frac{1}{2}$

* See pages 37 and 43.

SERIES OF TEMPERATURES TAKEN BY THE SPEEDWELL IN 1877, 1878, AND 1879.

[A + above the temperature indicates that it is that of the bottom, when that precise depth is not in the table; a Δ before the temperature indicates that the precise depth at which it was taken will be found in column Δ.]

Temperatures.												
Date.	Serial number.	Latitude.	Longitude.	Depth in fathoms.	Surface.						Δ.	
					Af.	0	5	10	15	20	25	
Aug. 6	9	0° 1'	25	0	0	0	0	0	0	0	0	
1877.	6	10	42° 26' 70.37	20.5	63.5	64.5	60.3	59.3	54	50.5	48.5	
	6	11	42° 26' 70.37	45	70	64.5						
	28	59	42 33 ¹ 70 38 ¹	25	68.5	65 ¹						21
Sept. 1	69	42 46' 62.43	40	26	67 ¹	66 ¹	67	60 ¹				
1878.	130	42 33 ¹ 70 23 ¹	40	68	63	60.5	46.5	47	43	41		
July 23	131	42 33 ¹ 70 38 ¹	45	68	62	60.5	46.5	47	43	41		
23	132	42 33 ¹ 70 38 ¹	45	70	63	Δ47.5	45 ¹	43	41	40.5		
26	135	42 33 ¹ 70 38 ¹	25	70	58.5	49.5				42.5	41	
26	135 a	42 33 ¹ 70 23 ¹	25	72						40		
29	137	42 33 ¹ 70 23 ¹	53	70	65	57.5	51 ¹	51 ¹	46	42.5	40	
Aug. 1	141	42 33 70 41 ¹	8 ¹	63	57.5	53.5	44.5					
1	145	42 33 70 41 ¹	8	63.5	56.5	Δ54	51					4
3	147	42 33 70 41 ¹	16	67.5	56.5			45.5	42 ¹			
3	149	42 33 70 41 ¹	19 ¹	66	61 ¹				43	42		
3	150	42 33 70 41 ¹	7 ¹	70	61	Δ56.5	51.5					4
8	153 a	42 35 70 31	17		62	52	48		44.5			
16	154	42 35 70 31	38	69 ¹	64.5	57 ¹			42 ¹	44 ¹	42 ¹	41.5

* Estimated.

19.5

SERIES OF TEMPERATURES TAKEN BY THE SPEEDWELL IN 1877, 1878, AND 1879—Continued.

Date	Serial number.	Latitude.	Longitude.	Depth in fathoms.	Temperatures.													
					Air.	Surface.	10 fathoms.	20 fathoms.	30 fathoms.	40 fathoms.	50 fathoms.	60 fathoms.	70 fathoms.	80 fathoms.	90 fathoms.	100 fathoms.	110 fathoms.	120 fathoms.
1878.																		
Aug. 15	157	0° 7'	0° 7'	40	°	73	0	0	0	0	0	0	0	0	0	0	0	0
		160	42 36	70 27	54	71.5	64	50	47.5	44.5	44	41.5	42.5	40	+ 39.5	(?)		
		161	42 44	70 38	54*	73	70.5	65.5	58	56.5								
		163	42 44	70 38	35	71	64											
		19	42 44	70 38	35													
		24	42 33	69 59	90													
		24	173	.....	115*	68.5	65.5	60.1	53.4	50.3	46.3	41.4	41.4	40.3				
		27	174	42 37	69 40	140	65.5											
		27	{ 176	42 38	69 41	175												
		29	179	42 24	70 36	7	67	59	54	47	47	53.3	50.5	45	44	42.5	41.5	
		29	184	42 33	69 55	45	73.5	64.1	60	57	52.5	53.5	53.5	42.3	42.3			
		31	185	42 33	69 55	110	68.5	64.1										
		31	186	.....	110*	73.5												
		31	180	.....	85	65.5												
		Sept. 2	195	42 27	70 19	29	72.5	63.1	62		55		51.5	45.5				
		9	200	.....	10	64.5	60	58	56.5									
		9	201	.....	8.5	63.5	61	58.5	54									
		1879.	279	42 09	70 15	13	74	63										
		4	280	42 09	70 16	12.5	71											
		4	281	42 12	70 16	14												
		4	282	42 13	70 13	13.5	72.2	61.2										
		4	283	42 09	70 22	31	70.7	65										

{ 6.5
12

6.5
7
7

DREDGING STATIONS OF U. S. FISH COMMISSION.

41

* Estimated.

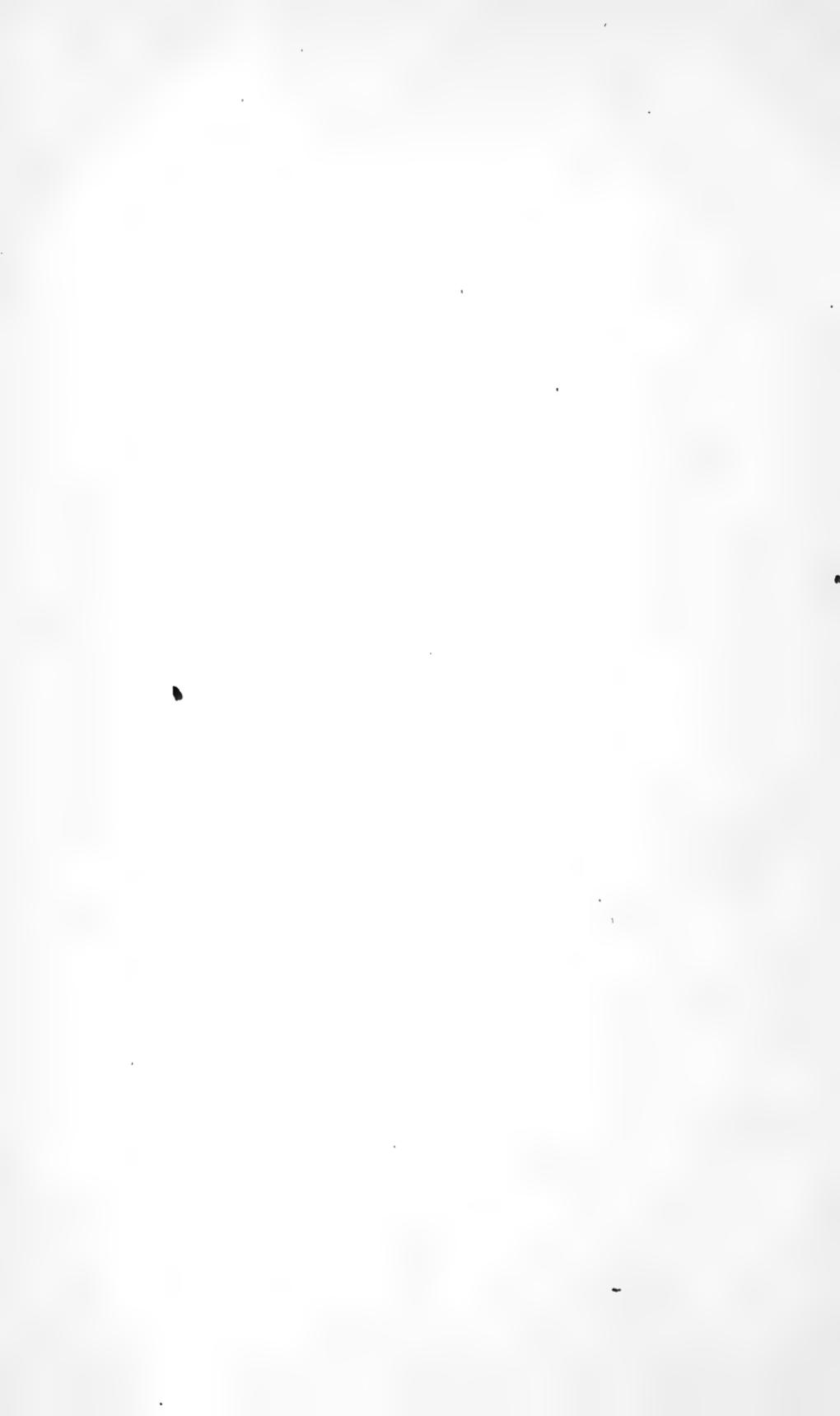
SERIES OF TEMPERATURES TAKEN BY THE SPEEDWELL IN 1877, 1878, AND 1879—Concluded.

Date.	Serial number.	Latitude.	Longitude.	Depth in fathoms.	Temperatures.	
					Af.	Surface.
1879. Sept. 9	338	41 57 $\frac{1}{2}$ 70 28	18	71	62.5	54.8
	9	339	41 54 70 28	15.5	75	63 55
	9	340	41 51 70 27 $\frac{1}{2}$	14	66.5	63 8
	9	341	41 51 $\frac{1}{2}$ 70 21 $\frac{1}{2}$	15.5	65.5	63.1
	10	342	42 16 69 56	94	63.5	58.5
	10	343	42 17 69 51	116	63	57
	10	344	42 19 69 47 $\frac{1}{2}$	130	64	57.5
	13	346	42 16 70 38	22	66.2	61.9
	13	347	42 12 $\frac{1}{2}$ 70 33 $\frac{1}{2}$	20	63	61.2
	13	348	42 09 $\frac{1}{2}$ 70 32 $\frac{1}{2}$	10 $\frac{1}{2}$	66	62.5
	13	349	42 10 $\frac{1}{2}$ 70 29	26	65	61.3
	13	350	42 08 $\frac{1}{2}$ 70 25	31	72.5	61.2
	13	351	42 05 $\frac{1}{2}$ 70 22	30	67	62.5
	15	352	41 54 $\frac{1}{2}$ 70 07 $\frac{1}{2}$	10 $\frac{1}{2}$	61.5	64
	15	353	41 53 70 10	14	61	63.3
	26	373	42 07 69 59	42	58	54
	26	374	42 04 69 54	46	64	54.5
	26	375	42 04 $\frac{1}{2}$ 69 53 $\frac{1}{2}$	46	59	54
	26	376	42 04 $\frac{1}{2}$ 69 54	46	59	54
	26	377	42 04 69 4 $\frac{1}{2}$	94	58	57

SERIES OF TEMPERATURES TAKEN BY THE SPEEDWELL SEPTEMBER 25 AND 29, 1879.

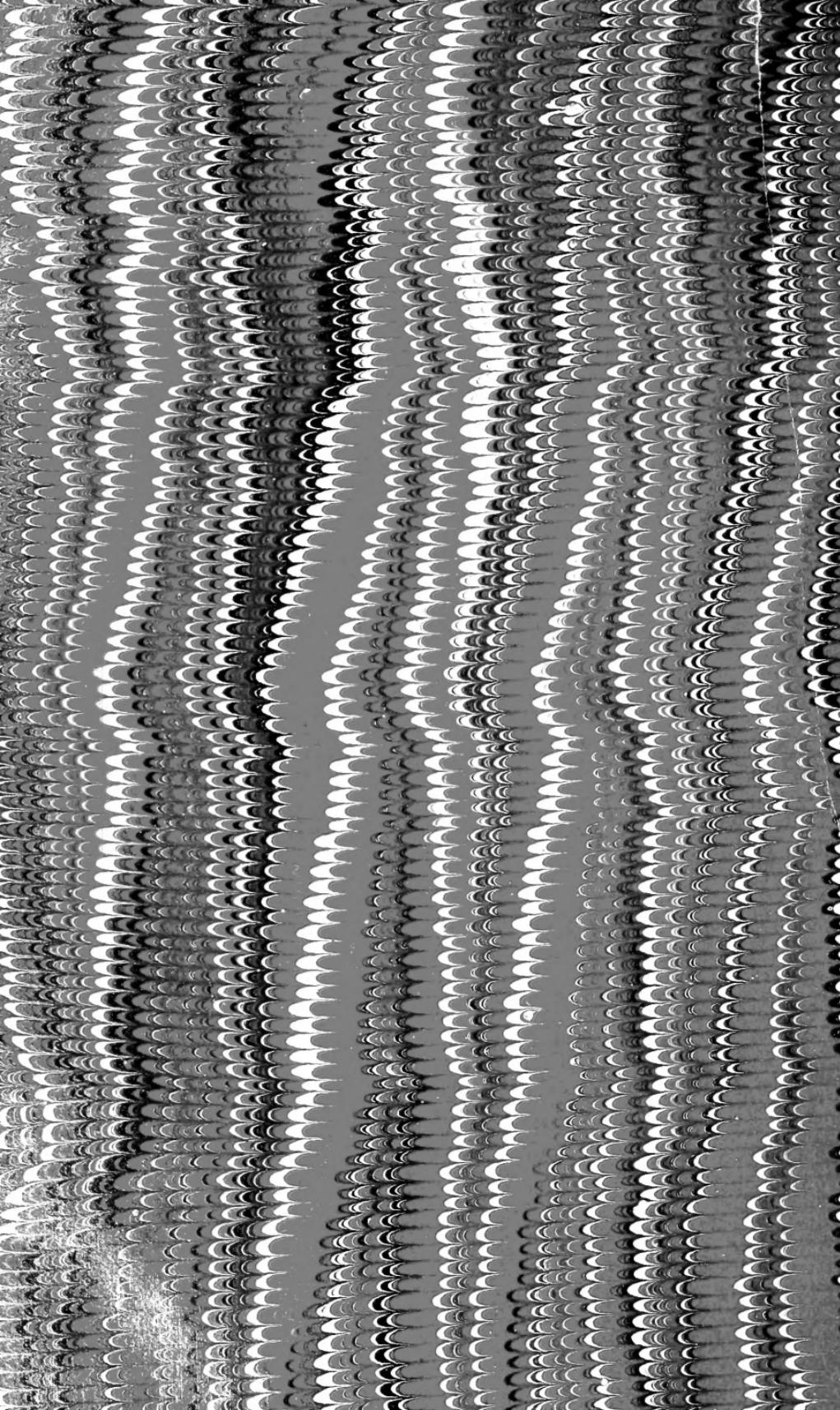
Sept. 25	1	17	55.5	50.75	+	47.8
25	2	21	55	50	+	47
29	3	22	59	56.5	+	45
20	4	24	57.5	46.5	+	44.2
29	5	21	57.2	56.5	+	45
29	6	21	57.5	56.2	+	45.2
29	7	19 $\frac{1}{2}$	58.5	57.5	+	46.1
29	8	19 $\frac{1}{2}$	58.5	57.5	+	46
29	9	24	59.2	57	+	44.8
29	10	26	63.5	58	+	44
29	11	30	69.5	58.5	+	46
29	12	33	66	67.8	+	48
29	13	34	66	59.2	+	44
29	14	11	67	58	+	44
29	15	23	63.5	57.2	+	44
29	16	19	62.5	58	+	44.2
29	17	26	63	57	+	44
29	18	28	62.5	57	+	45
29	19	49	62.8	57.8	+	46.5
29	20	32	62.5	57	+	46.5
29	21	21	64	57	+	45
29	22	28	62.8	56.5	+	45
29	23	33	61	57.5	+	45
29	24	30	61	58	+	44
29	25	27	61	58	+	44.9

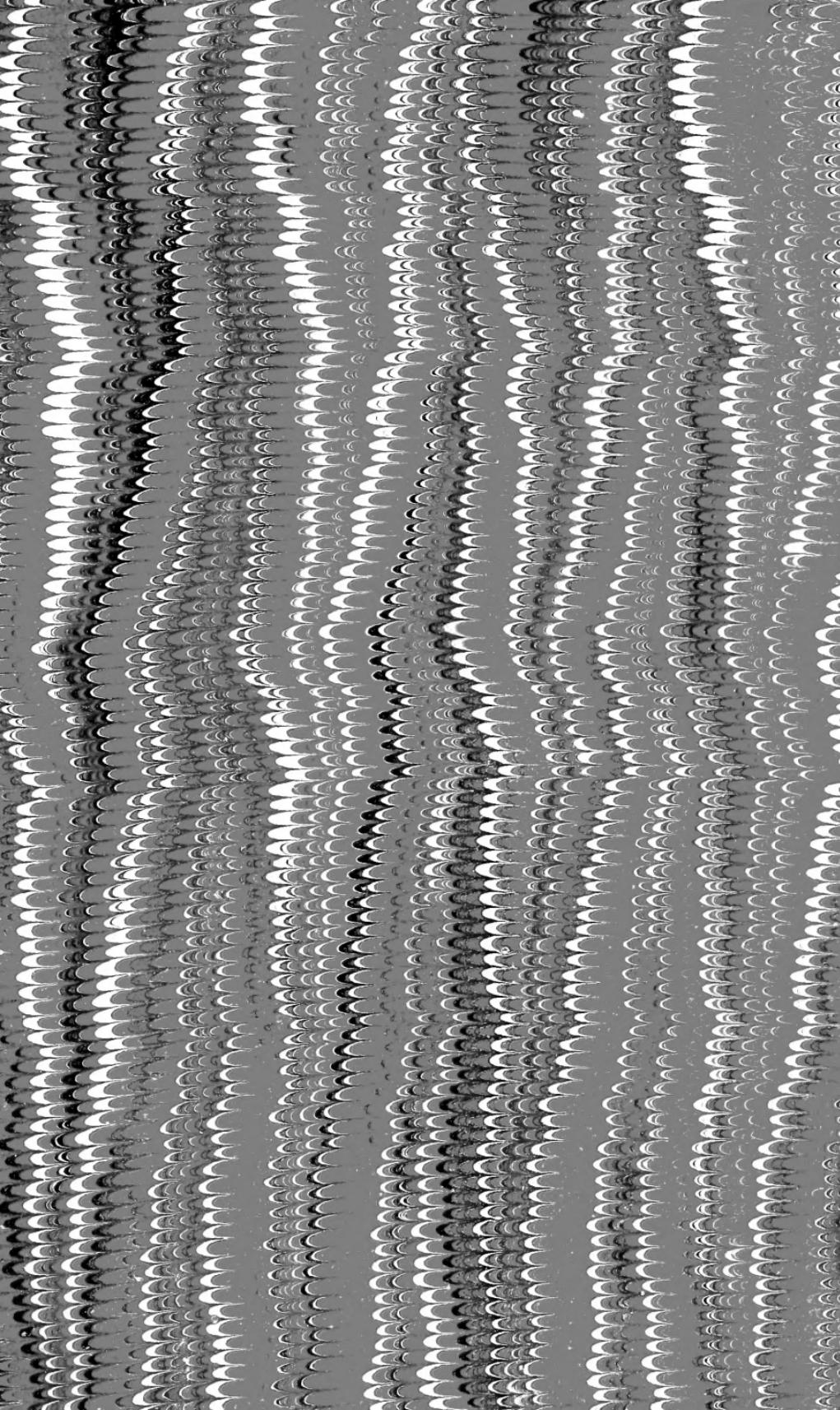
* See pages 37 and 38.











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